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Maritime Border Security

Keeping our maritime borders secure — and open to trade

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PROCEEDINGS

Spring 2014 Vol. 71, Number 1

Legal Issues

Plans, Partnerships, Policies

Border Security and the Environment

Border Operations

The Future of Border Security

Lessons Learned

On Deck

Assistant Commandants' Perspective

By Rear Admiral Joseph A. Servidio
Assistant Commandant for Prevention Policy
U.S. Coast Guard

&

Rear Admiral Peter J. Brown
Assistant Commandant for Response Policy
U.S. Coast Guard

The Coast Guard's role in border security goes back to its very founding. While advocating for the Constitution in the *Federalist Papers,* Alexander Hamilton proposed: "A few armed vessels, judiciously stationed at the entrances of our ports, might at small expense be made useful sentinels of the laws."[1] When he became the nation's first Secretary of Treasury, Hamilton followed up on that sentiment and created what we now know as the United States Coast Guard.

As challenging as border security was in the early days of our republic, it is infinitely more complex today, and the stakes are higher. Border security activities protect our nation from sophisticated, organized groups that would damage or steal our natural resources, smuggle dangerous drugs and weapons, or engage in human trafficking.

Fortunately, the Coast Guard has many allies. First among them are the mariners who work on the water and their counterparts who operate our nation's cargo and passenger facilities. Applying their keen sense of seamanship and employing their knowledge of port and waterfront activities, they maintain security systems and are alert for unusual or suspicious activity.

Vessel masters and facility security officers ensure their vessels, facilities, crews, and employees comply with domestic and international security requirements. Many of these individuals also volunteer in maritime security and area committees, and in other forums that evaluate risk, prepare contingency plans, and promote our collective security. The fact that our maritime borders remain secure despite persistent threats from criminal and terrorist organizations is a testament to these individuals and is an example of "prevention through people" at its very best.

Coast Guard men and women conduct border security operations from the waterfront to the high seas and have the privilege of working with a multitude of agencies and organizations. Domestically, we stand shoulder-to-shoulder with Customs and Border Protection, the Transportation Security Administration, the Department of Defense, and others. We are also fortunate to work with counterparts in other nations such as Transport Canada and the Royal Canadian Mounted Police on our northern border, the Japan Coast Guard, and the Chinese Fisheries Law Enforcement Command in the Western Pacific.

The diversity of these partnerships reflects the diversity of challenges in border security from smuggling and terrorism to resource management and immigration, and from cyber security to cross-border trade resumption after a natural disaster or attack. We challenge the reader to recognize the complexity and importance of border security and find ways to contribute, while facilitating the flow of commerce and the freedom of the seas that are so vital to our prosperity and way of life.

Endnote:

1. Alexander Hamilton, "The Utility of the Union in Respect to Revenue from the New York Packet," the *Federalist Papers,* November 1787.

Champion's Point of View

by CAPT Andrew Tucci
Chief, Office of Ports and Facilities
U.S. Coast Guard

With about 100,000 miles of maritime borders and an exclusive economic zone of 3.4 million square nautical miles, "U.S. border security" is a topic as big as the Coast Guard itself. The articles in this edition of *Proceedings* describe border security activities and operations from the South Pacific to the Great Lakes, the Gulf of Mexico, and the member states of the International Maritime Organization.

In addition to the immense geographic range of U.S. maritime border security, the many aspects, definitions, and views of "border" and "security" provide even more opportunities for a rich discussion. Borders on maps and charts have very specific locations. In practice, it is not always so simple. Author Aaron Casavant introduces us to concepts such as "the functional equivalent of the border," while he and other authors address a variety of border security activities that we undertake well outside our own legally defined borders.

If the term "border" is more expansive than we might guess, "security" is a concept that is as big as an ocean. As you will read, the Coast Guard is involved in many traditional border security operations, such as interdicting drug and human trafficking and enforcing our fisheries laws and regulations. The risk of oil spills near international borders leads us to environmental security activities, while the issue of seafarer access reminds us that sometimes we need to remove barriers to advance the ideals we are trying to preserve through security.

If security has many facets, partnerships belong at the heart of all of them. Author Dr. Tiffany Smythe, for example, puts partnership on a solid academic foundation in describing the role of "social capital" in border security and resilience; and I am sure that she and all of the other authors would join me in echoing Admiral Servidio and Admiral Brown's thanks to our many partners in border security.

This edition concludes with an article by Mr. Mike Smith, who challenges us to envision a world without borders. While borders still have their utility today, the phrase written in the main lobby of the Canadian Embassy here in Washington, D.C., reminds us that: "Borders define two peoples, but need not divide them." If we cannot yet achieve a world without borders, we can certainly embrace the sentiment expressed by our Canadian neighbors and find new ways to cooperate with border nations that promote joint security, prosperity, and trade.

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Understanding Maritime Borders

Sovereign rights at international borders.

by LCDR Aaron Casavant
Staff Attorney
U.S. Coast Guard Office of Maritime and International Law

When U.S. Coast Guard personnel seize a multi-ton load of cocaine from a go-fast vessel in the Caribbean, interdict a boat crowded with migrants in the Mona Pass, or clear a ship carrying 2,500 cargo containers for entry into the Port of Hampton Roads, they are protecting U.S. international borders.

State sovereignty and territorial integrity are fundamental concepts in international relations, and understanding them is essential to understanding international borders. Fundamentally, international borders have two essential functions:

- preventing unwanted persons and objects from entering a country,
- facilitating the safe flow of lawful travel and commerce among nations.

In the maritime context, the Law of the Sea Convention (LOSC) provides universally accepted principles for establishing borders at sea as well as delineating the various maritime zones, including the contiguous zone, exclusive economic zone, and high seas. Building upon centuries of maritime precedent, the convention also delineates limits and regulations for the territorial sea, archipelagic waters, and the continental shelf.[1]

While the authority of the coastal state is different in each of these zones, the general rule is that a coastal state's authority or power over a particular zone of water decreases as the distance from land increases.[2] From a maritime perspective, nations may exercise sovereignty over their territorial seas, which may be up to 12 nautical miles wide, measured from baselines established in accordance with the LOSC. However, this authority is still subject to certain navigational rights designed to guarantee freedom of the seas, such as the right of innocent passage.[3]

For example, President Ronald Reagan extended U.S. territorial seas in 1988 to the full 12 nautical miles permitted by international law.[4] As such, the "sea borders" of the United States may be characterized as consonant with its territorial sea.[5] While one can transit from maritime zone to maritime zone (e.g., a ship sailing from a contiguous zone to an exclusive economic zone), the territorial sea is appropriately considered a state's sea border since it is the only zone in which the coastal state has sovereignty similar to that exercised on land.[6]

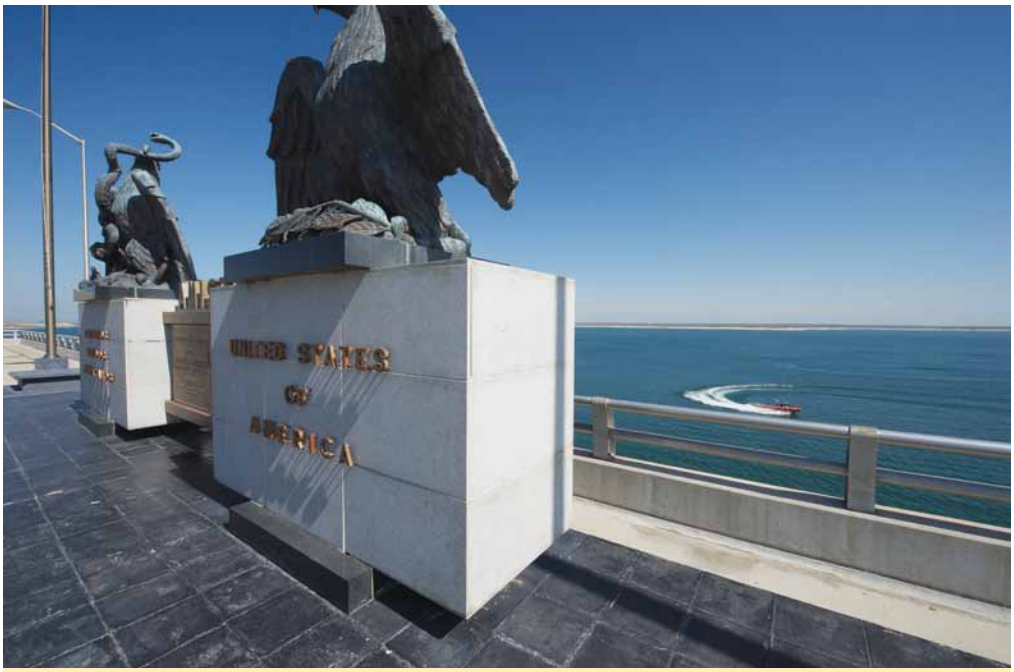
While the LOSC provides definitive international guidance for drawing baselines and establishing sovereign rights, international tribunals are still called upon to resolve maritime sovereignty disputes and draw enforceable boundaries at sea. For example, the International Court of Justice recently examined a dispute between Nicaragua and Colombia regarding sovereignty over certain features in the Western Caribbean Sea. In its decision, the court awarded certain land features and a surrounding band of water to Colombia and the exclusive economic zone and continental shelf outside that band of water to Nicaragua.[7] Similar issues, including ownership of fisheries and mineral resources, are implicated in the simmering Senkaku / Diaoyu Islands dispute between Japan and China.[8] These cases demonstrate that although the foundational principles of maritime borders are widely accepted, there are still international disagreements about the exact locations of certain boundaries.

The Rights of Sovereigns at International Borders

States have consistently imposed barriers at international borders and ports of entry for various purposes, such as deterring invading armies, imposing trade taxes, implementing quarantine measures, and preventing illegal entry. Territorial integrity is an essential characteristic of modern states and securing a country's international borders is

widely considered the "sovereign prerogative" of all states.[9]

In the United States, the Supreme Court has forcefully articulated the government's sovereign rights to control the borders in several important cases. In one of these, the court stated that "[i]t is axiomatic that the United States, as a sovereign, has the inherent authority to protect, and a paramount interest in protecting, its territorial integrity," and reasoned that "the Government's interest in preventing the entry of unwanted persons and effects is at its zenith at the international border."[10] To this end, Congress has granted executive branch agencies, such as the Coast Guard, broad authority to conduct routine searches of persons and their personal belongings at the border, without the normal protections of reasonable suspicion, probable cause, or warrants.[11]



Boat crew from the Maritime Safety and Security Team at Galveston patrol the waters near the American/Mexican border on Lake Amistad, Texas. U.S. Coast Guard photo.

For example, 19 U.S.C.§1496 authorizes customs officials to search the baggage of persons entering the country, while 19 U.S.C.§1582 authorizes the detention and search of all persons arriving in the United States from foreign countries. These routine searches may consist of pat-downs for contraband or weapons; removing outer garments such as jackets, hats, or shoes; emptying pockets, wallets, or purses; using drug-sniffing dogs; luggage inspections; or fingerprinting and photographing individuals. Customs personnel may also conduct routine vehicle searches, which can involve dismantling, removing, and reassembling a vehicle's fuel tank.[12] Furthermore, boats on inland waterways with ready access to the sea may be hailed and boarded with no suspicion whatsoever.[13]

Recognizing that border checkpoints can be bypassed, federal courts have extended a border enforcement agent's ability to conduct routine border searches and seizures beyond the physical border, when the person or thing to be searched is at the functional equivalent of the border.[14] This doctrine is remarkable, because it allows customs personnel to exercise broad border search authority at locations other than the international border. The functional equivalent of the border is "the first practical detention point after a border crossing or final port-of-entry."[15] As such, routine border searches may be conducted at the first practicable location, such as an airport or seaport. The doctrine applies so long as three elements are met:

- a reasonable certainty an object or person had crossed a border,
- no opportunity for the object of the search to have changed materially since the crossing,
- the search occurs at the earliest practical point after a border crossing.[16]

The Coast Guard's Role in Border Enforcement

Historically, the Revenue Cutter Service's original mission was to suppress smuggling and ensure that duties and taxes were paid to the federal government. This mission is a classic example of a young nation exercising its sovereignty through border protection and by engaging in international trade. Throughout the Coast Guard's history, the agency has played a central role in border protection efforts. Moreover, Coast Guard members are designated by federal law to carry out the duties of customs officers; and as such, these officers have significant border search authorities under 19 U.S.C. §§482 and 1582, and they exercise them in close coordination with Immigration and Customs Enforcement or Customs and Border Protection, to protect the country from threats.[17]

Three Coast Guard missions provide helpful examples of the service's role in protecting borders and enforcing U.S. sovereignty:

- drug law enforcement,
- immigration law enforcement,
- international port security assistance.

In alignment with national policy, the Coast Guard executes counter-drug operations designed to disrupt the flow of

USCG Threat Protection Partners

In border security terminology, threats can generally be classified as either threat actors or illegal goods. A threat actor is "…any person who intends to harm the United States or whose presence may lead to harmful consequences," while illegal goods are "certain weapons, illegal drugs, and counterfeit goods … [or] other goods [which] are generally legal, but become illegitimate because they are smuggled to avoid the enforcement of specific laws, taxes, or regulations." [1]

The United States relies on the U.S. Department of Homeland Security (DHS) to "prevent the illegal flow of people and goods across U.S. air, land, and sea borders while expediting the safe flow of lawful travel and commerce; ensure security and resilience of global movement systems; [and] disrupt and dismantle transnational organizations that engage in smuggling and trafficking across the U.S. border." [2]

The basic organizational responsibilities are outlined below:

- **Customs and Border Protection provides the front line responders for immigration and customs violations and serves as the DHS law enforcement arm.**
- **Immigration and Customs Enforcement serves as the investigative branch.**
- **The Transportation Security Administration secures our transportation systems.**

Endnotes:

1. Rosenblum, M., et al. (2013) *Border Security: Understanding Threats at U.S. Borders,* Congress Research Serv., R 42969.
2. Department of Homeland Security. *Quadrennial Homeland Security Review Report: A strategic framework for a secure homeland*; 2010. See www.dhs.gov/xlibrary/assets/qhsr_report.pdf.

illegal drugs into the country. Various domestic laws and regulations prohibit the transportation, possession, and distribution of controlled substances. Additionally, there are treaties and other sources of international law that support this domestic enforcement regime.[18]

For example, one of the substantive laws the Coast Guard routinely enforces, 21 U.S.C.§955, prohibits possessing or transporting controlled substances on vessels arriving in or departing from the United States. This prohibition is the preferred federal statute for cases involving possession of personal use amounts of controlled substances where a vessel border crossing has occurred and is an excellent example of a sovereign state attempting to prevent illegal goods from entering or leaving its territory.

Another law that the Coast Guard regularly enforces is the Maritime Drug Law Enforcement Act, 46 U.S.C.§§70501-70507. This statute prohibits the illegal transportation of controlled substances by vessel and applies within the U.S. contiguous zone, territorial sea, and internal waters to foreign and U.S. vessels and seaward of the contiguous zone to vessels otherwise subject the jurisdiction of the United States. The act is the appropriate statute for cases involving significant amounts of controlled substances, implying intent to manufacture or distribute, and is an example of how the Coast Guard "pushes the border out" to prevent contraband from entering the country. In its role enforcing these and similar statutes, the Coast Guard is empowered to arrest individuals, seize the contraband and the conveyance, and refer the case to federal, state, or local authorities for prosecution.

In addition to its drug interdiction mission, the Coast Guard also enforces immigration laws at sea. Customary and conventional international law gives coastal states sovereignty in their territorial seas and sovereign rights in their contiguous zones. This includes the authority to restrict access to their borders and to regulate admission of aliens by establishing circumstances and conditions over who enters the nation. The United States Constitution also grants Congress authority "to establish a uniform rule of naturalization," and Congress has exercised this authority in the Immigration and Nationality Act. The act and its implementing regulations provide that aliens may lawfully enter the United States only after having passed through a U.S. immigration inspection station, at which their compliance with various U.S. entry or admission requirements has been verified. Several other executive orders guide the Coast Guard in its enforcement of this statutory and regulatory regime, as it exercises its border control and law enforcement functions in the interest of national security.

Another way the Coast Guard achieves border security is through the International Port Security program. The Coast Guard can reduce the risk of a threat entering the United States from another country by assessing how well foreign ports prevent unauthorized personnel or material from gaining access to a vessel and by ensuring that cargo at a particular facility is protected from tampering.

Across its missions, the Coast Guard is an essential component of U.S. border enforcement and protection strategies. The Coast Guard asserts U.S. sovereignty and protects the territorial integrity of the nation in the maritime domain by interdicting illegal narcotics at sea; helping to ensure safe, orderly, and legal migration via maritime means; and assisting other countries in securing ports. These law enforcement activities are consistent with the law of nations, aligned with the historical rights of sovereign states to safeguard their borders, and serve to steadfastly reinforce the international rule of law.

About the author:
LCDR Aaron Casavant is a U.S. Coast Guard attorney in the Response Law Division of the Office of Maritime and International Law. He provides legal and policy advice to senior decision makers to facilitate Coast Guard maritime law enforcement operations including advising on domestic authorities and international law.

Endnotes:

1. Koh, T. Singapore Ambassador, Remarks at the Third U.N. Conference on the Law of the Sea, Dec. 11, 1982.
2. Essentially, "a state was entitled to exercise sovereignty over the maritime belt extending seaward from its shore up to the extreme range of cannon shot, and that the extreme range was about three marine miles from the low-water mark of the shore." See *The Three-Mile Limit: Its Juridical Status*. 6 VAL. U. L. REV. 170; 1972.
3. RESTATEMENT (THIRD) OF THE FOREIGN RELATIONS LAW OF THE UNITED STATES § 512 cmt. a. The right of innocent passage allows vessels to pass through the territorial sea of another state subject to certain restrictions. Passage is innocent "so long as it is not prejudicial to the peace, good order or security of the coastal State." LOSC, Article 19(1).
4. Proclamation No. 5928, 54 Fed. Reg. 777; Dec. 27, 1988.
5. A view affirmed by federal courts. See *United States v. Dobson*, 781 F.2d 1374, 1377, 9th Cir., 1986. (Coast Guard's boarding of a sailing vessel "one-quarter of a mile inside the boundary for U.S. territorial waters" when it had a firm belief that the vessel had come from international waters was considered a routine search at the border and therefore constitutional.)
   See also *United States v. Whitmore*, 536 F.Supp. 1284, 1292, D. Me; 1982 (noting that a vessel was stopped and searched at the border when it had been observed crossing into U.S. territorial sea and the border was two-tenths of a mile to its stern).
6. All other zones afford the coastal state only sovereign rights, which are functional in character and limited to specified activities (e.g., enforcing sanitation laws in the contiguous zone or exploiting natural resources in the U.S. EEZ of the Arctic Ocean).
7. Territorial and Maritime Dispute. (*Nicar. v. Col.*), 2012 I.C.J. 124; November 2012.
8. Haw, J. *The Senkaku/Diaoyu Islands Dispute in the East China Sea,* SCIENTIFIC AMERICAN; Jun. 7, 2013. Available at http://blogs.scientificamerican.com/expeditions/2013/06/07/the-senkakudiaoyu-island-dispute-in-the-east-china-sea/.
9. *Security Council Concerned at Threat Posed by Illicit Cross-Border Trafficking,* U.N. Press Release, SC/10624; Apr. 25, 2012.
10. *United States v. Flores-Montano,* 541 U.S. 152-153; 2004.
11. *United States v. Montoya de Hernandez*, 473 U.S. 531, 537; 1985.
12. *Flores-Montano,* 541 U.S. at 152.
13. *United States v. Villamonte-Marquez,* 462 U.S. 589; 1983.
14. *United States v. Hill,* 939 F.2d 934, 936; 11th Cir; 1991. (For the purpose of suspicionless customs searches, the border is elastic.) In general, borders are comprised of two components: (1) ports of entry; and (2) the expanse of land or water between ports of entry. (Places such as international airports within the country and ports within the country's territorial waters exemplify such functional equivalents.)
15. Yule, K. Cong. Research Service, RL 31826. *Protecting the U.S. Perimeter.* Border Searches Under the Fourth Amendment; 2009.
16. *Hill,* 939 F.2d at 937.
17. See 14 U.S.C.§143 ("Commissioned, warrant, and petty officers of the Coast Guard are deemed to be officers of the customs... ."); 19 U.S.C.§1901 (The terms "officer of the customs" and "customs officer" mean ... any commissioned, warrant, or petty officer of the Coast Guard... .)
18. See, e.g., United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances; 1988.

Not in My Port

U.S. District Court upholds captain of the port authority.

by LCDR Mimi Moon
Deputy, Environmental Law Division
U.S. Coast Guard Staff Judge Advocate

Mr. Benjamin Driscoll
University of Pennsylvania law student

On May 4, 2010, U.S. Coast Guard port state control officers examined the Norwegian-flagged crude oil tank vessel *Wilmina* and then issued the vessel a certificate of compliance (COC), based on review of the vessel's certificates and limited tests of the pollution prevention equipment. The COC confirmed that the vessel had the necessary international certificates required to operate in U.S. waters.

However, at one point in the inspection process, officers were handed a hard drive that contained video evidence showing the vessel's crew had bypassed the oily water separator by means of a bypass hose attached to an overboard discharge pipe. Upon a second, expanded vessel examination, officers found several inconsistencies corroborating the video evidence.

APPS in Action

One of a nation's fundamental border security responsibilities include foreign-flagged vessel inspection or examination and prohibiting port entry to any vessels found in violation of domestic laws—a practice long established by customary and international law.

Discharging unprocessed oily water violates the International Convention to Prevent Pollution for Ships (MARPOL), an international treaty to which United States is a signatory. The Act to Prevent Pollution from Ships (APPS) implements MARPOL in U.S. federal law, making violations illegal.

The captain of the port (COTP) determined that the actions violated APPS and asserted his authority in the Ports and Waterways Safety Act to bar the tank vessel, based on violations of U.S. laws, regulations, or treaties. On May 21, he issued an administrative order revoking the vessel's certificate of compliance and preventing entrance into the port of Corpus Christi, Texas. This was the first time the Coast Guard asserted its authority granted under the Ports and Tanker Safety Act, an amendment to the Ports and Waterways Safety Act (PWSA), against a tank vessel in violation of U.S. environmental statutes.[1]

In addition to revoking the vessel's certificate of compliance, the COTP required the owner and operating company to submit to an environmental compliance plan for a period of one year, as a condition of the vessel's re-entry. The vessel owner could seek port state control inspection for a certificate of compliance after three years, or after implementing a Coast Guard-approved environmental compliance plan with satisfactory audits for at least one year. If the company did not demonstrate compliance, the vessel would be barred for a period of three years.

The Company Files Suit

In response to these actions, the shipping company appealed the administrative order to the captain of the port, the district commander of the Eight Coast Guard District, and the commander of the Coast Guard Atlantic Area, in accordance with the agency's appeal regulations. Not satisfied with the responses, the company subsequently filed suit against the Department of Homeland Security, challenging the Coast Guard's authority under the Administrative Procedure Act to issue the administrative order barring entry and the conditions set for re-entry.

The suit claimed that the Coast Guard's actions were arbitrary and capricious, and revoking the certificate of

compliance without a hearing deprived the owners of due process. Additionally, the company argued that the Coast Guard lacked the statutory authority under the PWSA to issue the orders banning the vessel, requiring the environmental compliance plan as a condition for entry and that the Coast Guard lacked the factual basis to revoke the COC and bar entry.[2]

The Case

The District Court compared 33 U.S.C.§1228 to Chapter 37 of Title 46, which sets specific provisions under which the Coast Guard may allocate or revoke a COC. Accordingly, the court determined that barring a vessel's re-entry must be combined with articulating a path towards compliance.[3]

The plaintiffs argued the Coast Guard's authority under PWSA only extends to emergency situations and that a ban based upon alleged violations exceeds its power. Pointing to larger disasters that prompted the legislation's passage, they suggested the legislation was intended primarily to address major issues. However, the legislative history as well as the text itself repeatedly referred to marine protection broadly and never attempted to limit the scope of Coast Guard authority. The legislative history also referred repeatedly to the dangers posed by oil tank vessels, directly identifying them as a focus for regulatory action.[4]

Additionally, plaintiffs argued that the ban violated their due process. The court confirmed that the plaintiffs have a protected property interest in the COC since it was issued prior to the revocation; however, the property interest only required notice and hearing appropriate to the nature of the case.[5] The court determined the administrative appeals satisfied due process since they provided an opportunity for reconsideration of the order.

The Decision

The District Court found that the Corpus Christi COTP relied upon authority under 33 U.S.C.§1228 of the PWSA, which mandates vessels be barred from operating in the navigable waters of the United States when discharging waste in violation of federal law or international treaty or when a history of pollution created a reasonable threat.[6] Thus the court determined it was within the Coast Guard's authority to revoke a COC in the manner performed; however, conditions for reinstatement must be directed at bringing a vessel into compliance and not simply setting a term of years. Therefore, the requirement to successfully complete an audit for at least a year remained in place, while the alternative barring for three years was struck down.

The court articulated its decision as a balance between the two parties, stating that the authority of the Coast Guard was neither as broad as the defendants posited nor as narrow as the plaintiffs argued.[7] However, rejecting the Coast Guard's alternative option of a three-year ban, the court left unclear whether it cancelled the administrative order or extended the ban indefinitely, until proof of compliance. This question was still being challenged in the court at the time of publication.

An oily water separator onboard a motor vessel in the Port of Los Angeles. (Not the vessel in question.) U.S. Coast Guard photo by Petty Officer Prentice Danner.

The Implications

The court's decision to uphold the Coast Guard's action offers the Coast Guard the choice between pursuing resource-heavy criminal proceedings or simply barring a tank vessel from entry, with conditions for reinstatement, if it violates U.S. laws or regulations. This poses significant resource advantages to the Coast Guard. By barring the vessel, complications such as paroling the crew, requiring surety, or physically holding a vessel can be avoided, while still achieving some level of compliance.

Additionally, the court's decision allows the burden to be placed on the operator of the vessel to prove they are no longer a threat, rather than requiring the repeated effort

The Ports and Waterways Safety Act Authority

The PWSA began as the Ports and Waterways Safety Act of 1972, as an attempt to address increasing hazards and pollution in waterways. Prior to its enactment, two hazardous substance spills occurred in the Chesapeake Bay; and the USS *Yancey* tore loose from its anchorage slamming into the Chesapeake Bridge, closing it for 21 days. The following May, President Nixon urged for legislation directed at ports and waterways safety.[1]

The Coast Guard and Department of Transportation (DOT) presented their version of a Ports and Waterways Safety Act, H.R. 17830, but it was considered unduly vague. During the drafting of alternative legislation, the SS *Oregon Standard* collided with the SS *Arizona Standard* in San Francisco Bay, Calif., causing more than 180,000 gallons of oil to spill.[2]

While Congress focused on the paramount importance of preventing human casualties, the numerous environmental disasters sparked a specific interest in protecting coastal ecosystems from vessel pollution.[3] The legislation attempted to address this issue through prevention, authorizing the DOT secretary to take necessary actions to protect the coastal waters against potential damage.

Discussion of the legislation repeatedly articulated the broad authority designated to the secretary. Implicit to this authority is the ability to control which vessels gain access to the waterways, an intent indicated by the preventive nature of the legislation and provided within the authority to "take full or partial possession and control" of the vessel.[4]

Following the statute's enactment, the Coast Guard faced criticism for moving too slowly implementing the provisions, highlighted by lawsuits mandating more rapid progress.[5] Increases in maritime traffic combined with a specific rise in oil imports necessitated updates to the regulations. A particular issue was the number of foreign-flagged vessels found to have deficiencies, yet not denied entry to port.[6]

To address the concerns, Congress amended the Ports and Waterways Safety Act of 1972 with the Port and Tanker Safety Act of 1978. Among several changes to the statute was the addition of §1228, tasking the Coast Guard with prohibiting the entry or operation of tank vessels in U.S. waters in violation of federal and international pollution laws.[7]

Endnotes:

1. House of Representatives Reports, Report 92-563; Oct. 12, 1971.
2. House of Representatives Reports, Report 92-563; January 18, 1971.
3. U.S. Congressional and Administrative News 92-339, 2768-2769; 1971.
4. US Congressional and Administrative News 92-339; 1971.
5. House of Representatives Reports, Report 95-1384; 1978.
6. "The Coast Guard has reported that, between January 21, 1977 and June 8, 1977, it has examined 1,262 foreign flag vessels and had found a total of 4,306 deficiencies which were eventually corrected. During this period, however, only five foreign flag tank vessels were extensively detained, and only two foreign flag tankers were denied entry because of their deficiencies." *Id.*
7. 33 U.S.C. §1228.

of the Coast Guard to review for compliance.

This case served as a seminal case for the Coast Guard to assert its authority under §1228. If a tank vessel is found in violation of federal or international pollution laws, it may be indefinitely barred until the Department of Homeland Security secretary is convinced it is no longer a threat to safety or the marine environment. The secretary must establish any measures that the tank vessel owner or operator must take to be granted re-entry and provide notice of those requirements, but the effect is immediate. As federal budgets get tighter and resources get constricted, barment may become a viable alternative to criminal proceedings in environmental cases against tank vessels.

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Mr. Benjamin Driscoll was an intern when he coauthored this article and is a law student at the University of Pennsylvania.

Endnotes:

1. See 33 U.S.C. §1228.
2. No. 11-2184, 2013 *U.S. Dist.* WL 1225382; D.D.C. March 27, 2013.
3. *Wilmina Shipping.* WL 1225382, at 12; D.D.C. March 27, 2013.
4. PL 95-474; Port and Tanker Safety Act of 1978.
5. *Cleveland Bd. of Educ. v. Loudermill,* 470 U.S. 532, 542; 1985.
6. See 33 USC §1228.
7. *Wilmina Shipping.* WL 1225382, at 3; D.D.C. March 27, 2013.

With a Little Help From Our Friends

How social capital enabled security amid recovery.

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We often talk about resiliency in the language of infrastructure, supply chains, security systems, and recovery plans. But resiliency is also social; it is found in people, in the relationships among port partners who facilitate port and marine transportation system recovery after disasters, and who work together to prevent disasters. These relationships are forms of social capital, which is a critical yet underemphasized element of port resiliency.

Social Capital Aids Resiliency

The term social capital refers to relationships among individuals that are characterized by trust, mutuality, credibility, reciprocity, and networks. As implied by the term "capital," these relationships and the networks they form can be very valuable.

For example, social capital can provide access to information and resources and can be leveraged to acquire other resources. It can also be relied upon in a crisis, or to help solve a problem, and can help facilitate joint action among a diverse group of individuals and organizations. Not to be confused with official arrangements like public/private partnerships or interagency memoranda of understanding, social capital is not necessarily evident on paper. While formal membership on a harbor safety committee or in a neighborhood watch association can help build social capital, it is by definition informal and largely intangible.

Why is Social Capital Important?

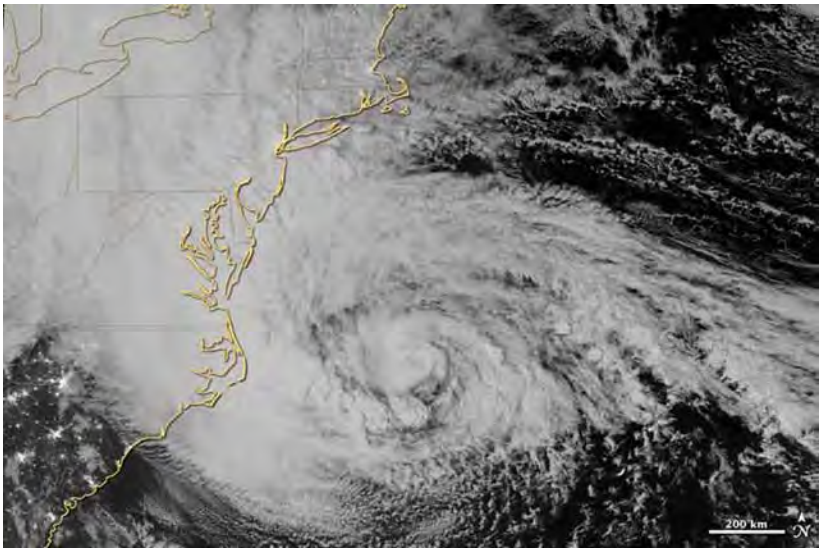
Social capital has implications for resiliency and security. It has been found to be essential to the successful recovery of communities after major natural disasters such as earthquakes, hurricanes, and tsunamis. For example, research has shown that differing types and quantities of social capital explains why some New Orleans neighborhoods rebounded faster than others after Hurricane Katrina.[1] Similarly, social capital is critical to homeland security and played an important role in facilitating interorganizational communication and collaboration in the response to the 9/11 disaster.[2]

Dr. Russell Dynes, a disaster expert, calls social capital "our most significant resource in responding to damage caused by natural and other hazards, such as terrorism."[3] Moreover, it is inexpensive to cultivate, benefits all involved, and is renewable. Social capital can also be used to respond to and recover from a disaster and can grow through that process—thereby enhancing resiliency in the face of future disasters.

Social Capital, Hurricane Sandy, and the Port of New York and New Jersey

Consider, for example, the recovery of the Port of New York and New Jersey in the aftermath of Hurricane Sandy. This historic storm drove an enormous storm surge into the New York and New Jersey coastlines in October 2012, causing widespread damage and disruption to maritime activities and resulting in the port's closure for nearly a week.

Submerged shipping containers and other debris created navigational hazards, security equipment at marine terminals was destroyed or disabled, and most electronic communications systems were down. Despite all of this, port partners worked together to reopen the port in just days and to maintain the security of the port despite widespread damage, power outages, and fuel shortages. While the marine transportation system recovery unit (MTSRU), a specialized inter-organizational unit that the Coast Guard uses to coordinate marine transportation system recovery,



Hurricane Sandy approaches the Atlantic coast of the U.S. in the early morning hours of Oct. 29, 2012. NASA Earth Observatory image by Jesse Allen and Robert Simmon, using VIIRS Day-Night Band data from the Suomi National Polar-orbiting Partnership.

coordinated this recovery and facilitated plans already in place, recovery effectiveness depended in large part on longstanding relationships—powerful connections among individuals from federal, state, and city agencies and private businesses that make up the port network.

> **"Relationships were key—that was the true success of the port recovery."**
>
> **—CDR Linda Sturgis, prevention chief at Coast Guard Sector New York, during Hurricane Sandy response and recovery.**

While social capital is often described as an attribute of communities like neighborhoods in New Orleans, it is also an attribute of "communities of practice," like the network of partners in the Port of NY and NJ. The port's successful recovery after Hurricane Sandy provides countless examples of social capital in practice, how social capital is cultivated, and why it is worthwhile for the Coast Guard and other maritime agencies and stakeholders to make the modest investments necessary for its development.

The Hurricane Sandy MTSRU was stood up two days before the storm due to a collaborative effort among representatives from Coast Guard Sector New York, along with more than 50 port partners and stakeholders including Customs and Border Protection (CBP), the U.S. Army Corps of Engineers, the National Oceanic and Atmospheric Administration Office of Coast Survey, the bi-state Port Authority of New York and New Jersey, the Sandy Hook Pilots Association, marine terminal operators, trade associations like the New York Shipping Association, shipping agents, and numerous maritime businesses and interests.

MTSRU participants described this unit as efficient and effective—further evidence of the port community's strength and resilience. This was not just because of the MTSRU structure itself, but because of trust and a sense of mutual obligation that already existed among its members.

> **"We've been working all these issues for so many years and developing that trust, so when something happens, it just naturally flows."**
>
> **—Captain Andrew McGovern, Sandy Hook Pilots Association.**

Border Security Amid Response

In particular, social capital played a critical role in helping the port community maintain border security throughout the marine transportation system recovery process. Coast Guard Sector New York and CBP's Port of New York and Newark office exchanged information, solved problems, and in many cases brainstormed innovative solutions amid the post-storm damage and power outages.


The Hurricane Sandy Marine Transportation System Recovery Unit. U.S. Coast Guard photo by Petty Officer Eric Swanson.

One key example is how Coast Guard Sector New York and CBP collaborated to manage the post-storm influx of traffic into the port. The first ships to enter the harbor following the storm included cargo vessels as well as a cruise ship with approximately 4,000 passengers and 2,000 staff members aboard. The Coast Guard and CBP typically coordinate vessel, passenger, and cargo

Customs and Border Protection officers in action after Hurricane Sandy. Photo courtesy of Mr. Joshua Denmark, U.S. Customs and Border Protection.

screening by phone and electronic communications. However, because communications were still down and power outages were widespread when marine commerce resumed, CBP embedded an agent in the Coast Guard command center, so the agencies could work together 24/7 to ensure their missions were met.

> **"We drew upon our existing professional networks to overcome technical challenges."**
>
> **—LCDR Brian McSorley, assistant chief of Safety and Security Operations, Sector New York.**

This arrangement worked because personnel from the two agencies had a strong working relationship characterized by a sense of mutual understanding and obligation. "We understand each other," said CDR Linda Sturgis, prevention chief at Coast Guard Sector New York during Hurricane Sandy response and recovery.

Social capital was also evident in how these agencies worked with the private sector (in this case, with marine terminal managers) in maintaining security at these facilities following Hurricane Sandy. The storm knocked out a considerable amount of security equipment and infrastructure, including security booths, motion-sensor cameras, fences, and gates. Equipment that had not been destroyed was largely useless, due to power outages.

Teams of Coast Guard facility inspectors were deployed to marine terminals and worked with terminal managers to develop alternative compliance measures for mandated facility security requirements. This required a great deal of trust among Sector New York leaders, the field-based facility inspectors, and the terminal managers. Fortunately, Sector New York and NY/NJ terminal managers have collaborated for years and already had built a high level of trust.

Cultivating Social Capital

Why is social capital so strong in the Port of NY and NJ, and how can it be developed elsewhere? Evidence from Hurricane Sandy suggests that existing coordinating mechanisms like area maritime security committees and harbor safety committees that are very active in the port enhance social capital by growing meaningful networks.[4]

For some time now, it has been acknowledged that there are many actors from the public and private sector in the maritime domain, and all hands are needed to

How To Screen Cargo Without Working Equipment

Customs and Border Protection (CBP) maintains its own screening equipment at Port Newark's exit gates. Consequently, this equipment, including radiation portal monitors, which are used to screen cargo leaving the facility, suffered damage from Hurricane Sandy. Making matters worse, CBP could not allow cargo to leave the port without conducting this screening.

CBP personnel leveraged social capital as a means to coordinate, innovate, and to assist their own staff in recovery and to solve a host of problems with essential security-related equipment.

Customs and Border Protection's port staff worked closely with headquarters and with external partners to locate replacement equipment, including security booths and new screening panels for the radiation portal monitors, from locations throughout the country and to arrange for transporting this equipment to the port amid transportation and power disruptions.

Friends in "High" Places

This required extensive coordination with a range of other partners and resulted in some innovative solutions. For example, CBP leased a 747 to fly in the new screening panels, borrowed space from Newark Liberty International Airport to store equipment and stage recovery work, and worked with Port Authority police to get access to fuel for support vehicles.

"Since we have these strong working relationships, we were able to do some makeshift things like borrow an airplane hangar … if we hadn't developed those relationships beforehand, this wouldn't have happened," stated Ms. Adele Fasano, CBP port director at the Port of New York/Newark.

manage the complexities of maritime space and the multitude of maritime threats. Bringing these people together regularly played an important role in building social capital among committees.

> **"You don't want to meet them in a crisis. You want to meet them when things are quiet, and establish those relationships."**
>
> **—Mr. Frank Fiumano, port security specialist, Sector New York.**

Some Hurricane Sandy MTSRU members explained the success of the recovery as being grounded in these committees. For example, the longstanding NY/NJ Harbor Operations Committee met on a regular basis, so its members were used to working together for the betterment of the port.

In addition, evidence from Hurricane Sandy also illustrated how social capital is built through adversity.[5] Some MTSRU members described the strong working relationships among port partners as grounded in the port response to past incidents, ranging from smaller storms like Hurricane Irene in 2011 to the terrorist attacks of September 11, 2001.

These experiences built trust among port partners as well as a sense of common purpose that rose above public/private sector boundaries or the competition inherent within the private sector.

Planned exercises and simulations also bring agencies together and build relationships, trust, and mutual understanding. Additionally, exercises facilitate knowledge transfer, another benefit of social capital. Exercises help those involved to learn the authorities, capabilities, and resources that each individual and organization brings to the table, while building relationships that will facilitate future operations.

Key to Port Resiliency

Port resiliency involves more than hardening infrastructure, protecting the supply chain, and enhancing security plans and protocols. It involves people and the ties that bind them across agencies, jurisdictions, sectors, industries, and geographies. These examples illustrate how social capital can enhance port resiliency by enabling an efficient marine transportation system recovery process, while maintaining border security.

These examples also illustrate that social capital is already being cultivated in the maritime domain. But we must continue building upon and enhancing this social capital and developing new mechanisms to cultivate these relationships.

We have not seen our last storm in a port. In an era of a changing climate, increasing maritime domain usage, and diminishing government resources, port planners, managers, and stakeholders are challenged to make ports and maritime commerce resilient to all manner of threats. Cultivating social capital in port communities and within the maritime domain is one of the most powerful and cost-effective investments we can make in marine transportation system recovery, border security, and port resiliency.

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Dr. Smythe conducts research on marine policy at the Center for Maritime Policy and Strategy at the Coast Guard Academy. She has a Ph.D. in marine affairs from the University of Rhode Island. She also holds a 100-ton USCG master's license and has sailed as professional crew aboard sail-powered training ships.

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Endnotes:

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Border Security Tools

Managing risk at our maritime borders.

by LT Michelle Keating
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Since much of our nation is surrounded by water, this affects our global trade, commerce, and tourism. So it is no wonder that maritime security and port security are essential facets of overall U.S. border security. The U.S. Coast Guard (USCG) monitors more than 95,000 miles of coastline, along with hundreds of ports, the Intracoastal Waterway, western rivers, and the Great Lakes to protect our nation's waters, the people who use them, and our nation from waterborne threats.[1] The USCG Domestic Port Security Evaluation Division provides a suite of integrated tools to assess, analyze, and mitigate risks associated with maritime terrorism.

PS-RAT/MSRAM

At its inception in the days following the Sept. 11, 2001 terrorist attacks, division personnel created the Port Security Risk Assessment Tool (PS-RAT), which allowed local captains of the port to assess port vulnerabilities and potential consequences in the event of a maritime terrorist attack. However, the subjectivity of the tool at the field level made it difficult to glean useful conclusions on a national level.

In 2006, building upon the strengths of the PS-RAT and aligning with Homeland Security Presidential Directive 7,[2] Domestic Port Security Evaluation Division members created the Maritime Security Risk Analysis Model (MSRAM). It has since become a USCG accredited and institutionalized tool—the fifth system to achieve formal accreditation.

The Coast Guard uses the MSRAM risk analysis tool to assess the risk of terrorist attacks to the marine transportation system, critical infrastructure, key resources, and other potential terrorist targets. The tool contains more than 30,000 potential nationwide targets and 100,000 attack scenarios, analyzed using a common risk methodology that considers:

- the threat of an attack,
- target vulnerability,
- the consequences of a successful attack.

MSRAM field analysts submit data annually, which are then reviewed and validated through the chain of command. The data are used to support Coast Guard risk management decisions at the strategic, operational, and tactical levels. The Coast Guard also shares Maritime Security Risk Analysis Model data with maritime stakeholders through area maritime security committees.

Since 2006, personnel have enhanced the tool annually, adding features such as explosive blast and secondary economic modeling tools to improve consequence estimates, a system security calculator to improve vulnerability judgments, and refined threat input through collaboration with the USCG Intelligence Coordination Center.

Risk Management Workspace

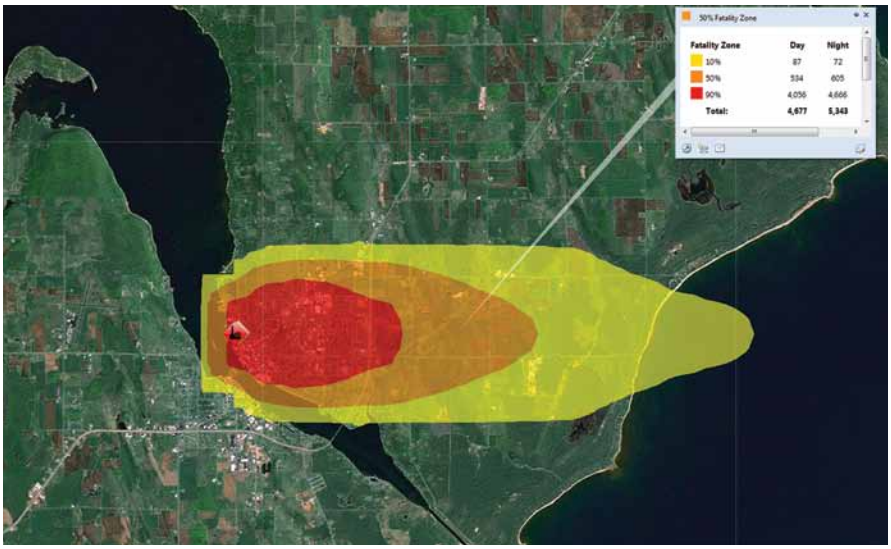
In 2013, the division released the Risk Management Workspace (RMW) to field users, as an extension of MSRAM that functions within the Coast Guard's Enterprise Geographic Information System. The RMW is a user-friendly way to display and communicate risk information and perform additional analyses that rely on geospatial information.

The workspace displays targets, scenarios, and risk-related MSRAM data. It includes features such as user-defined population, blast and hazardous chemical dispersion consequence calculators for fixed and moving maritime assets,

The Risk Management Workspace geographically displays targets, scenarios, and risk-related information as color-coded icons on a map display. All data displayed in all RWM screenshots are notional.

and water-based law enforcement response calculations. The consequence calculators can be used to determine fatality estimates, leveraging census population data to provide location-specific results.

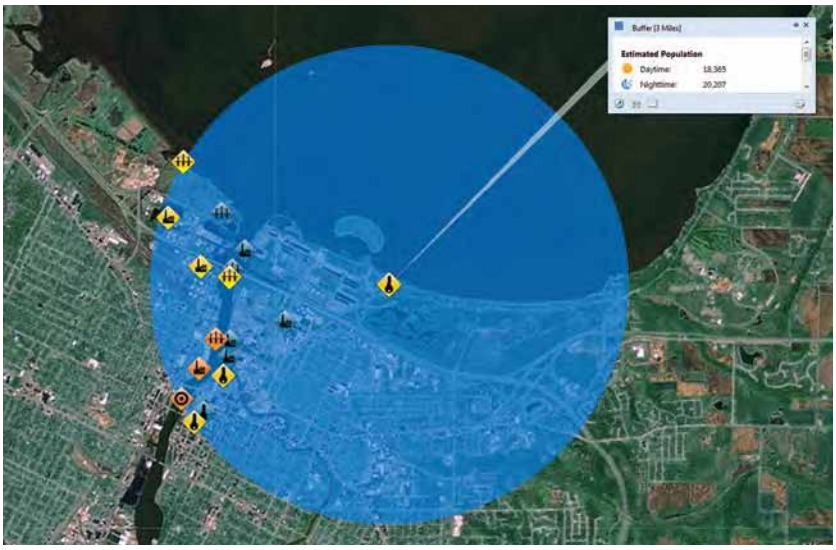
The certain dangerous cargoes (CDC) consequence calculator within the workspace provides an estimate of the expected fatalities and serious injuries resulting from the release of toxic, flammable, or explosive chemicals from fixed facilities or vessels transiting through a given area. These estimations are particularly relevant for risk analysis, as other models simply calculate exposure levels.



The certain dangerous cargoes consequence calculator analyzes wind direction and displays results.

Building upon the CDC consequence calculator capability, the pathway analysis tool provides consequence estimates for a potential chemical release at any point along the length of a vessel transit. By performing multiple CDC release analyses along the vessel's path, the tool generates fatality and serious injury estimates at various points along a transit. This tool can also be used to analyze chemical releases for any moving target, including railcars or commercial cargo carriers on highways.

Pathway segments are color-coded by risk level, which allows users to view the change in risk as the vessel transits areas of varying populations. Additionally, population data can be adjusted to account for transient populations and special events such as coastal attractions or venues, boat parades, and waterfront security events.



Population information is automatically imported into RMW analyses or may be leveraged in a separate tool to calculate the population of a specified geographic area or target location.

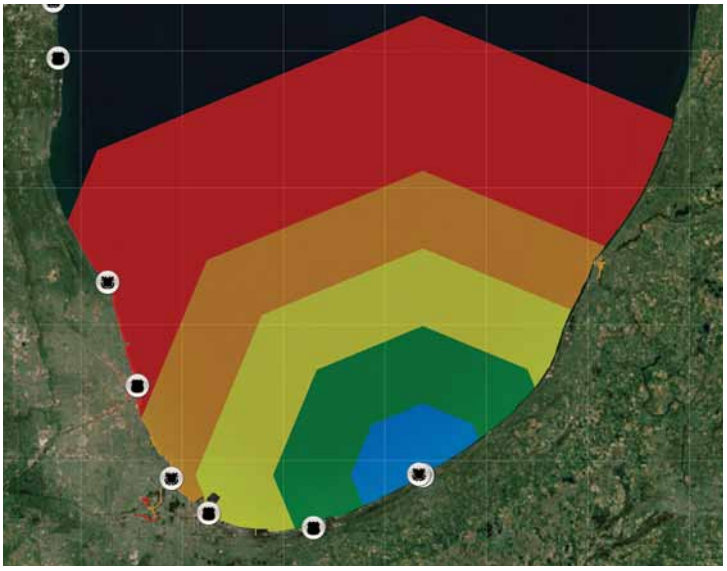
Other waterway-based analysis tools in the RMW include the early interdiction and focused lens input modules, which are designed to allow USCG and other U.S. law enforcement agencies to anticipate transit time to a specified location across a waterway. These modules are highly useful for law enforcement agencies to estimate the time required to intercept and interdict terrorists before they reach an attack location and provide valuable data for response capability for all-hazard response.

Success Stories

In addition to supporting USCG field user analyses of steady-state border port operations, as part of the annual MSRAM data cycle, the workspace has been used for special event security planning and developing vessel escort policy. In a resource-constrained operating environment, it is important to employ USCG and other law enforcement resources in the most efficient manner. The RMW pathway analysis tool has been used at the strategic level to analyze the risk of CDC vessel transits through key port areas. As a result, the USCG updated CDC vessel escort policy to focus on the areas of greatest risk.

The pathway analysis tool analyzes chemical releases from moving targets.

Stakeholders also leveraged RMW resources as part of the interagency planning process for the 2012 Republican National Convention in Tampa, Fla. For example, planners employed the CDC consequence calculator to evaluate impact areas from a potential chemical release and used the RMW blast calculator to develop the waterway management and security planning strategy. Leaders used RMW tools to brief the USCG's waterside security footprint to other government agencies—thus greatly improving risk awareness for this high-level event.



By analyzing the MSRAM data including vessel capability and speed, distance over water can be calculated from boat stations or local vessel launch sites within the constraints of navigable waterways.

For the Future

Communication tools such as the Risk Management Workspace will enhance our ability to protect resources efficiently and lessen the impacts of a potential terrorist attack. Moving forward, we must continue to expand our border security measures, share lessons learned, and mitigate risk. Globalization through technology, communication, and transportation continues to shrink our world. Improving and expanding our knowledge of risk and communicating risk-related findings are essential to protecting U.S. borders, critical infrastructure, and key resources.

About the authors:

Prior to this assignment, LT Michelle Keating was stationed at Sector St. Petersburg as a prevention officer in the field of marine inspections and provided support for Operation Deepwater Horizon for the west coast of Florida. She received her commission through Officer Candidate School in 2008 following completion of a B.A. in criminology from the University of South Florida.

Mr. Philip Howard is the project manager leading RMW development for ABS Consulting. Mr. Howard has supported the USCG Domestic Port Security Evaluation Division and the Maritime Security Risk Analysis Model since 2008. He holds a B.S. in mechanical engineering from the University of Cincinnati and an M.S. in nuclear engineering from the University of Tennessee.

Mr. Cameron Arimoto is a risk analyst for ABS Consulting, working with the USCG Domestic Port Security Evaluation Division. He has been a member of the MSRAM team since June 2011, where he has focused on developing and training the RMW. Mr. Arimoto is a graduate of Pennsylvania State University, where he earned a B.S. in security and risk analysis.

Endnotes:

1. *United States Coast Guard 2013 Posture Statement.* Washington, D.C.: United States Coast Guard headquarters, April 10, 2013.
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Plying Dangerous Waters

Maritime security in a changed world.

by Mr. Lou Orsini
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U.S. Coast Guard Office of Law Enforcement

One of the most important lessons the United States learned from the 9/11 terrorist attacks is that threats to America's security are broad and diverse. Prior to that tragic day, people wouldn't have given much thought to the idea of terrorists gaining control of our commercial airplanes to commit deadly attacks on humans in buildings.

Beefing up security in American airports was a natural and necessary first step, but it was not nearly enough to protect the American public and the broad range of vital U.S. interests. What if the 9/11 attacks had focused on blowing up commercial vessels in major U.S. ports? Or perhaps attacks on critical maritime infrastructure such as an offshore oil platform? Such an attack on the marine transportation system would have closed down the very lifeblood of American commerce for an indeterminable time.

The Department of Homeland Security

The federal government created the Department of Homeland Security (DHS) as a long-term solution to national security. This move brought together 22 disparate agencies with varying responsibilities, authorities, and capabilities to better prepare for, protect from, and respond to threats.

The U.S. Coast Guard, U.S. Customs and Border Protection, and other federal, state, and local agency crew inspect a Coast Guard Auxiliary boat during an exercise to evaluate radiation sensors. U.S. Coast Guard photo.

It seemed logical that the U.S. Coast Guard, the nation's primary maritime safety and security agency, should be a part of DHS. However, it was not readily apparent as to where the service fit into the new department's primary responsibility to protect America's land, air, and sea ports of entry.

Threats to the United States can be natural or manmade. Although terrorist attacks are most often associated with border security, which rightfully are the primary focus for DHS, they are the tip of the iceberg. From drug and migrant smuggling to illegal fishing and environmental crimes, a multitude of maritime border security threats exist. Unlike the obvious devastation caused by a terrorist attack or a hurricane, these less visible threats eat away at the fabric of American society and undermine the nation's health and economic vitality.

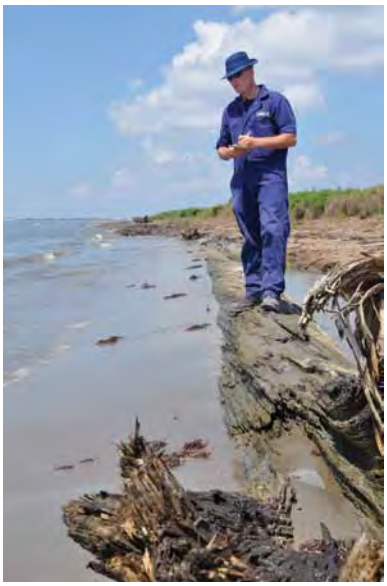
Working with its DHS partners, the U.S. Coast Guard leverages its unique maritime security authorities, capabilities, capacity, and partnerships to mitigate risk and improve security in our domestic ports, within U.S. waters, on the high seas, and in ports abroad. The overarching strategy is to increase maritime border security through a layered security system that begins beyond the country's physical borders.

A crew member from a CGC *Harriet Lane* small boat assists a Haitian migrant aboard. U.S. Coast Guard photo by Petty Officer Jennifer Johnson.

This layered approach to security begins in foreign ports where the Coast Guard conducts port assessments, using the International Port Security Program to assess security and antiterrorism measure effectiveness. Well before vessels arrive in U.S. ports, screening and targeting operations yield critical information about vessels, crews, passengers, and cargo destined for the United States. Maritime patrol aircraft provide broad surveillance capability, enabling cutters to respond to potential threats, launch boats and aircraft in adverse sea states, and maintain a presence through all weather conditions.

To prevent and respond to potential threats approaching our coasts, shore-based Coast Guard helicopters, patrol boats, and small boats monitor, track, interdict, and board vessels. In our ports, the DHS components including the Coast Guard, along with federal, state, local, and tribal partners, working in concert with port stakeholders, maintain a safe and secure port environment by patrolling U.S. waters and guarding critical infrastructure, conducting vessel escorts, and inspecting travelers, vessels, and facilities.

CGC *Valiant* crew members offload more than $48 million in illicit drugs at Coast Guard Base Miami Beach, Fla. U.S. Coast Guard photo by Petty Officer Sabrina Elgammal.



Petty Officer Ryan Johnson, a marine science technician, observes the state of an oil-impacted beach during a shoreline assessment in Grand Isle, La. U.S. Coast Guard photo by Petty Officer Caleb Critchfield.

Challenges Abound

Maintaining effective border security is a huge challenge for several reasons, not the least of which is keeping watch over a geographic span of 95,000 miles of coastline and 7,500 miles of land border.[1] But even that huge expanse only includes the physical borders of the United States, which is what most people envision when describing our borders. To fully understand the actual expanse and complexity of border security requires an understanding and appreciation of the maritime environment.

The U.S. has a 12-mile territorial sea, another 12 miles of contiguous zone, and 3.4 million square miles of exclusive economic zone to monitor and control. Through these waters transit a huge volume of legitimate commercial cargo and recreational vessels. U.S. ports and waterways handle more than 2 billion tons of domestic and international cargo each year.[2] In 2010, cruise ships calling in U.S. ports carried nearly 15 million passengers.[3] To handle the commercial and the growing recreational maritime interests, the U.S. Coast Guard maintains a world-class aids to navigation system to keep waterways navigable.

Beyond our jurisdictional waters is a 6 million square-mile swath of ocean between South America and the United States through which transit hundreds of tons of illicit drugs and thousands of illegal migrants toward the U.S. every year. Unfortunately this activity also returns millions of dollars in illicit profits and contraband weapons back to transnational criminal organizations.[4]

Regardless of the cargo, this illicit maritime traffic comes in a variety of modes, including:

- the ubiquitous go-fast vessels operating primarily in littoral waters and often blending with legitimate recreational traffic;
- typical fishing vessels and coastal freighters with hidden compartments;
- stealthy self-propelled, semi-submersible and fully submersible vessels designed and built solely for smuggling.

Smuggling tactics are limited only by the smuggler's imagination and include any number of tricks such as creating secret compartments within vessel hulls and inside tanks, towing a submerged tube, and dissolving cocaine in fuel or other liquids for later recovery.

Smugglers travel far offshore outside the expected range of law enforcement, move through territorial waters to take advantage of enforcement seams that result from varying jurisdictions and sovereign limitations, hide in plain sight by mixing with legitimate traffic, move at night to avoid detection, and cover their vessels with tarps in daytime to blend with the ocean.

The very nature of criminal enterprises gives them a decided advantage; smugglers get to choose the time and place of the activities and they needn't follow any of the rules. Further, law enforcement assets must overcome the tyranny of time and distance to reposition in a timely manner in response to actionable intelligence—all this with aging assets and limited force levels.

A Framework for Success

Effective border security requires the right mix of authorities, capabilities, capacities, and partnerships. DHS includes Customs and Border Protection (CBP), Immigration and Customs Enforcement, U.S. Citizenship and Immigration, the Transportation Security Administration, and the U.S. Coast Guard; together these agencies bring a plethora of border security tools.

Within the DHS border security enterprise, the Coast Guard has primary responsibility for securing the maritime borders and facilitating the flow of legitimate maritime traffic.

A petty officer patrols New York harbor. U.S. Coast Guard photo by Petty Officer Mike Lutz.

For commercial traffic, this begins in foreign ports with security and anti-terrorism assessments and ends with port state control and security measures taken in U.S. territorial waters and port facilities. Well before arrival, each vessel's crew and cargo are screened and assessed as to their potential threat level. Potential threats vary from individual crew members and passengers to the cargo or the vessel itself. The nature of the threat could be related to terrorist activities, smuggling operations, environmental dangers, and safety concerns.

Depending on the nature and level of the threat, USCG and CBP personnel take appropriate action including boarding the vessel at sea, refusing the vessel permission to enter the United States, having the vessel anchor outside the port, escorting the vessel into port, requiring the vessel's master to hire additional security, requiring the crew to remain aboard, conducting extensive examinations and inspections of persons and cargo, and other actions as necessary to ensure the safety and security of the port and the vessel.

Team members from a joint dockside boarding and investigation that included the U.S. Coast Guard, Customs and Border Protection and Puerto Rico Police Department inspect a hidden void where more than 2,000 lbs of illicit drugs were found. U.S. Coast Guard photo by Lt. j. g. Eric Willis.

For noncommercial traffic such as small pleasure craft, the challenge is more acute, unlike the air domain where takeoff and landing locations are limited, reporting is required, and radar tracking is constant for noncommercial aircraft. In the maritime domain, pleasure craft can move about the maritime commons due to their large numbers and relatively small profile, particularly in coastal waters, without attracting much attention. Further, there is no requirement for these vessels to file an advance notice of arrival. Registration requirements and markings vary significantly among nations and even between local jurisdictions. Additionally, pleasure craft are not mandated to use a tracking device like the Automated Identification System, which is required of commercial vessels, or a vessel monitoring system, which commercial fishing vessels use.

Hence, law enforcement personnel must rely on a combination of tactical information, local knowledge, law enforcement experience, and specialized training to identify and respond to potential threats. Using its broad authority under 14 U.S.C. 89, USCG personnel routinely patrol U.S. jurisdictional waters as well as in international waters to detect, stop, board, inspect, examine, and search vessels suspected of engaging in or supporting illicit activities. In addition, USCG units board non-suspect vessels as well to ensure compliance with safety regulations and to project a deterrent presence in the maritime domain.

While often forgotten in the challenge to maintain border security and protect American sovereign and economic interests, the U.S. Coast Guard is the only agency patrolling and protecting critical offshore infrastructure, sources of energy, and natural resources within the 3.34-million square mile U.S. exclusive economic zone. This important long-range border control function protects that infrastructure, as well as a fishing industry that contributes to more than a quarter of a trillion dollars to the U.S. economy annually.[5]

In carrying out its living marine resources responsibilities, Coast Guard officials monitor exclusive economic zone boundaries and areas closed to fishing activity to protect threatened species. They also board fishing vessels at sea

to ensure compliance with safety and fisheries regulations that can only be monitored underway. These law enforcement activities contribute to important deterrent and safety regimes that conserve critical fisheries stocks and reduce the number of instances where search and rescue assistance may be required.

From Stovepipes to Partnerships

As the Department of Homeland Security continues to mature and increase its ability to provide for the safety and security of the nation, the Coast Guard and its sister components have found new, innovative ways to cooperate and coordinate efforts across their broad and often overlapping areas of responsibility to fill security gaps and eliminate redundancies. Gone are the days where DHS agencies expended duplicate efforts and operated largely in isolation. Now, the cooperation needed to protect the nation and facilitate success is routine and occurs at multiple levels.

Moreover, DHS components develop joint strategies and policies to establish national priorities and guide operations. Operational cooperation coalesces at joint commands such as joint operations centers, regional coordinating mechanisms, regional concurrence teams, air and marine operations centers, and border enforcement security taskforces. These entities bring together the appropriate DHS agencies and pull in other federal, state, local, tribal, and international partners.

The various DHS components have developed the means to blend their talents and agree to lead agency designations based on authorities, capabilities, and competencies. Instead of operating in a vacuum, the components operate via the Maritime Operational Threat Response process to determine the lead agency, based on which one is the most logical choice.

The analysis starts with authority. Leaders ask the question: All other things being equal, which agency has the clearest and strongest authority to prosecute a case? Authorities aside, if one agency has the better capability to place a unit on the scene with the necessary capabilities to interdict a suspect, lead agency will reside there. Further, lead agency designations can and do shift as the circumstances of the case change, if it becomes apparent that a different agency is in a better position to take the lead.

Moving Ahead

Border safety and security is a multifaceted DHS responsibility that involves operations occurring throughout multiple missions, regions, domains, authorities, and environments. It is based on the need to protect the country, facilitate economic growth, and recover from disasters. Hence, cooperation and coordination among the DHS components to secure and expedite the flow of people and goods is critical to success.

For the Coast Guard with its primary responsibilities in the maritime arena, this means pushing out our borders to detect, monitor, intercept, and stop threats as early as possible, while protecting critical maritime infrastructure in jurisdictional waters. It also means facilitating legitimate commerce, including maintaining an effective aids to navigation system, keeping sea lanes open, protecting the port/ocean interface, and quickly sorting and isolating potential maritime threats from legitimate commerce. The earlier threats can be interdicted, the greater the chances of success in negatively impacting transnational criminal organizations and gaining actionable intelligence leading to additional tactical successes. Further, when working together effectively, tactical successes can lead to prosecutions of higher levels of criminal organizations, with the eventual effect of disrupting and dismantling them.

While the Coast Guard and its DHS partners can point to many successes, not the least of which has been our ability to prevent a terrorist attack on U.S. interests in the maritime arena, our job is far from done. DHS components must remain vigilant, connected, coordinated, forward-deployed, and positioned for action. Coast Guard assets deployed throughout ports and waterways, maritime approaches, and high seas stand a critical part of the DHS watch. The Coast Guard remains as it has stood for more than 200 years, *Semper Paratus*—always ready.

About the author:

Mr. Lou Orsini provides expert advice on law enforcement strategies, policies, tactics, techniques, and procedures primarily involving drug and migrant interdiction and fisheries enforcement. He ensures USCG law enforcement strategy and policy support and are consistent with relevant national and international considerations, requests, and requirements to ensure effective program management.

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3. Ibid.
4. *Strategy to Combat Transnational Organized Crime: Addressing Converging Threats to National Security.* The White House, July 2011. Available at www.whitehouse.gov/sites/default/files/microsites/2011-strategy-combat-transnational-organized-crime.pdf.
5. *Fisheries Economics of the United States 2011: Economics and Sociocultural Status and Trend Series.* National Marine Fisheries Service, U.S. Dept of Commerce, NOAA Tech Memo, NMFS-F/SPO-128, printed December 2012. Available at www.st.nmfs.noaa.gov/Assets/economics/documents/feus/2011/FEUS%202011%20National%20Overview.pdf.

Fishing Enforcement

Not so sexy, but necessary.

by CAPT Robert Hendrickson
Chief, Enforcement Branch
U.S. Coast Guard 14th District

If there were a "continuum of cool" for transnational crime fighting and border security, with hunting down terrorists and drug dealers at the far left of the scale, fisheries enforcement would be at the extreme opposite end of the spectrum. You never saw the guys from *Miami Vice* or *Hawaii 5-0* busting some bad dude for an under-sized tuna, and you'll probably never see a Hollywood blockbuster about measuring the cod-end of a fishing net. Even though fisheries enforcement isn't the most exciting mission, it is an important one.

Fisheries enforcement is a global concern, because it impacts the global commons, as fisheries and their sustainability are intrinsically linked to food security and economic stability, and thus, regional and border security.

A Strategic Tuna?

Approximately 60 percent of the world's tuna supply comes from the "Tuna Belt,"[1] a region located within five degrees of the equator in the Western and Central Pacific Ocean. Therefore, activities within this region have strategic impact. In 2007, the Australia Government Overseas Aid Program estimated that fisheries constituted 64 percent of the island state Kiribati's gross domestic product, which is typical for this Pacific Coast region.[2] Therefore, illegal, unreported, and unregulated (IUU) fishing is a primary regional economic and security threat.

Gary Stokes/iStock/Thinkstock

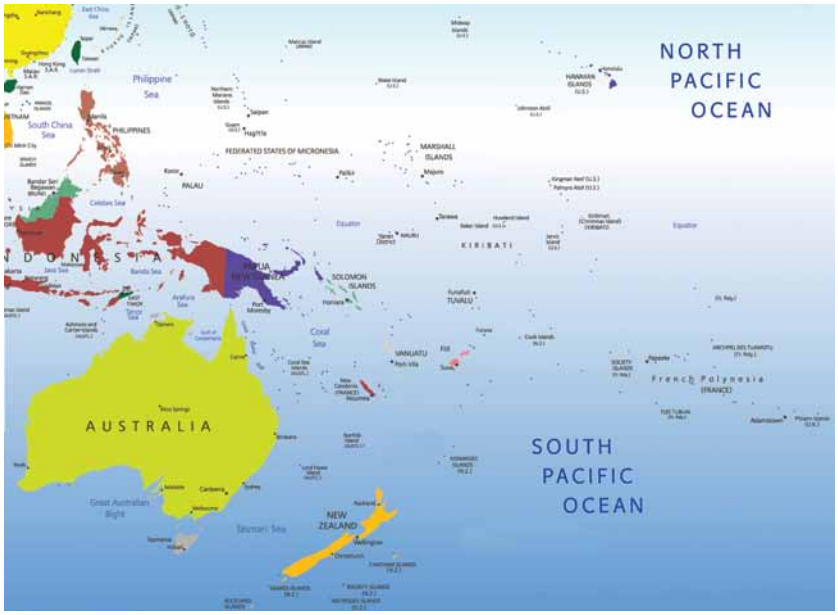
According to INTERPOL, IUU fishing accounts for an estimated $2 billion in economic loss within Oceania (the area encompassing Central and South Pacific islands).[3] This constitutes a threat to regional economic security, especially when estimates on reported catch show that the regional tuna fishery is being harvested at approximately 90 percent of maximum sustainable yield.[4] Additionally, IUU overfishing adds another 33 percent, which will not be sustainable for the long term and could result in a stock collapse, essentially depleting the tuna stocks within the Tuna Belt.

This not only threatens the region's economic stability, but also represents a significant threat to regional food security and could destabilize the entire region—making those nations more susceptible to transnational crime. Moreover, it has been my personal experience that IUU fishing brings a host of other transnational criminal activity including contraband smuggling, human trafficking, and other violations.

The Sea is so Large and my Boat is so Small

Coast Guard District 14's area of responsibility (AOR) includes the Indian Ocean, half of the Antarctic Ocean, and most of the Pacific Ocean. While the primary area for fisheries enforcement interest is just the portion of the AOR surrounding Oceania, this area encompasses some 20 million square miles and includes 20 sovereign states as well as Hawaii, Guam, the Northern Marianas Islands, Wake Island, Howland and Baker Atolls, Johnston Atoll, American Samoa, Jarvis Island, and Palmyra Atoll. These noncontiguous U.S. exclusive economic zones (EEZs) comprise 43 percent of the entire U.S. EEZ.[5]

Coast Guard assets in this area are finite. District 14's three seagoing buoy tenders, true to their name, are primarily used for aids to navigation missions. Additionally, we have a smattering of patrol boats that police the vicinity of the main Hawaiian Islands and four C-130 fixed-wing aircraft that perform fisheries enforcement, among other missions. So we have minimal cutter support for this effort; therefore, the Coast Guard works with its partner agencies to provide an effective and persistent security and enforcement presence.



Ruslan Olinchuk/Hemera/Thinkstock

Map of Oceania.

Ocean Guardian

The U.S. Coast Guard's fisheries enforcement strategic plan identifies four key concepts to combat illegal, unreported, and unregulated fishing:

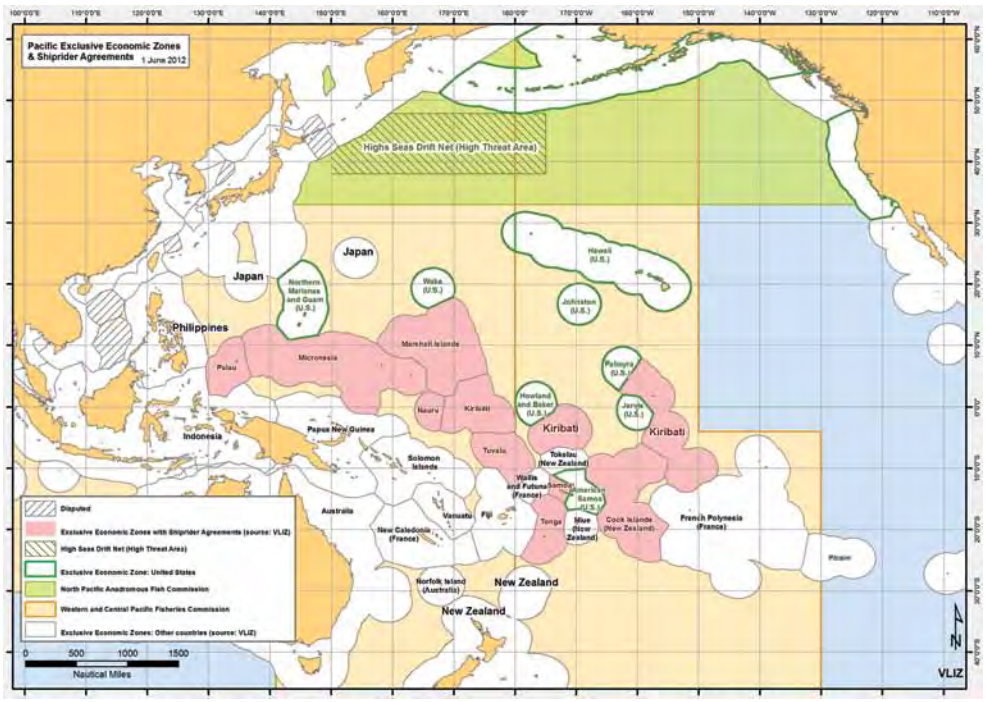
- **productive partnerships,**
- **technology,**
- **effective presence,**
- **sound regulations.**

Productive Partnerships

As the Coast Guard's area of responsibility encompasses numerous sovereign states, its partnerships range from domestic to multilateral international. Domestically, the Coast Guard partners with the Western Pacific Regional Fishery Management Council and the National Oceanic and Atmospheric Administration (NOAA) to develop, enforce, and adjudicate U.S. fishery regulations.

The Coast Guard has also partnered with the United States Navy through the Oceania Maritime Security Initiative (OMSI). Through OMSI, law enforcement detachments are placed aboard U.S. Navy vessels transiting through the AOR to areas like Pearl Harbor or the U.S. West Coast to identify vessels along the warship's track line. This information is then passed on to District 14's enforcement personnel. The enforcement staff in turn correlates the sightings with area contacts. Last spring, we conducted the inaugural OMSI deployment aboard the USS *Reuben James*, and the law enforcement detachments cited more than a dozen violations on vessels.

Additionally, the Coast Guard engages in a significant number of international partnerships involving operational bilateral shiprider agreements[6] and direct engagement with Pacific region powers, specifically Australia, France, and New Zealand. The Coast Guard maintains bilateral shiprider agreements with Palau, the Federated States of



The District 14 area of interest: Non-contiguous EEZs are outlined in green and Pacific island countries with an existing bilateral shiprider agreement are highlighted in pink. U.S. Coast Guard graphic.

Micronesia, the Republic of the Marshall Islands, Nauru, Kiribati, Tuvalu, Samoa, Tonga, and the Cook Islands. Under the shiprider paradigm, enforcement personnel from these island states embark transiting U.S. Navy OMSI vessels or U.S. Coast Guard cutters patrolling adjacent U.S. waters. The Coast Guard assists these enforcement officers in asserting their sovereignty, authority, and jurisdiction within their EEZs. By helping regional partners project authority into their own exclusive economic zones, the Coast Guard builds organic capacities and capabilities to combat illegal, unreported, and unregulated fishing and transnational crime, and helps keep these threats from crossing into U.S. exclusive economic zones.

USS *Reuben James* and USCG law enforcement detachment personnel conduct a boarding on a purse seine vessel. U.S. Coast Guard photo.

The District 14 commander also serves as the U.S. member of the Quadrilateral Defence Coordination Group, which is comprised of flag officers and subject matter experts from Australia, France, New Zealand, and the United States. To date the U.S. Coast Guard has conducted operations with ships and aircraft from each of these partners. By leveraging resources from partner states, coordinating patrol efforts, and sharing maritime domain awareness information, District 14 has engaged professional maritime force multipliers strategically centered in the western, eastern, and southern sectors of the region.

Applying Technology

Other key Coast Guard partnerships in the Western and Central Pacific Ocean focus on leveraging technology. Traditional technology partners such as the Maritime Intelligence Fusion Center Pacific and other intelligence enterprise nodes have a number of tools at their disposal to help identify nefarious vessels of interest. Coupling these linkages with other technology partners helps significantly increase maritime domain awareness. On the domestic side, the Coast Guard works with NOAA's vessel monitoring system transponder device, which uses satellite technology to identify fishing vessels by name and location and Automatic Identification System information to sort contacts.

District 14 also has a good partnership with the Center for Island, Maritime, and Extreme Environment Security, which is developing semi-autonomous surface craft equipped with sensor packages. We also use commercial oceanographic/hydrographic data services to identify high-threat areas in or near U.S. EEZ borders.

Effective Presence

District 14 accomplishes a more effective enforcement presence by leveraging these partnerships and technologies. As budget belts are tightened and fiscal and operational resources become ever more constrained, operators are increasingly called upon to demonstrate a return on resource investments. We must demonstrate to our elected officials and the American taxpayer that we are being diligent stewards of the resources entrusted to us.

Sound Regulations

It is often said within enforcement circles that if regulations cannot be enforced, not only are they a waste of paper, but they also serve to undermine the overall rule of law. Unenforceable regulations engender an attitude that lowers inhibitions to abide by those regulations that are enforceable. The best technology, the most effective partnerships, and even having a constant presence are worthless if a regulation cannot be enforced and/or a violation is not adjudicated in a manner that causes a disincentive for future violations.

So how does the Coast Guard accomplish that in an AOR that includes more than 20 different sovereign states and

A U.S. Coast Guard C-130 overflies USS *Crommelin* and a sovereign state patrol boat on patrol together in the Pacific. U.S. Coast Guard photo.

dozens of enforcement agencies? The simple answer is that we cannot accomplish it without international cooperation. In fact, the Coast Guard cannot actually accomplish it—we can merely advocate for it. It is up to the respective states and jurisdictions to collaborate effectively to address regulatory schemes and adjudication.

The Way Ahead

The Ocean Guardian, a fisheries enforcement strategic plan, gives us a solid framework to push new initiatives. In such a large global commons, no one agency or nation can effectively combat illegal, unreported, and unregulated fishing, and other border threats. As we continue engagement with regional partners and build their organic capacities and capabilities, the U.S. will strengthen the rule of law and make our own borders more resilient.

By sharing technologies with our regional partners, we increase their maritime domain awareness and ours as well through joint enforcement, better communication, and trust. Finally, we must broaden our partnerships and engagement to include agencies that control legal and regulatory development and adjudication. Ideally, we will advocate for a regionally implemented penalty scheme that is homogenous among jurisdictions within Oceania, so bad actors do not cherry-pick where they fish illegally or otherwise violate the law.

It takes a village to police the global commons and adjacent sovereign borders, so the Coast Guard must continue to maintain, strengthen, and expand its partnerships.

USCGC *Mohawk* small boat personnel transport members of a Senegalese law enforcement detachment to a mock boarding. U.S. Coast Guard photo by Petty Officer Victoria Bonk.

About the author:

CAPT Robert Hendrickson is a 32-year Coast Guard veteran. He commanded two cutters in 14 years at sea, deployed twice to Africa in support of developing fisheries enforcement capabilities, served as the deputy chief of Fisheries at Coast Guard headquarters, and as Coast Guard liaison to NOAA.

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2. See www.illegal-fishing.info/uploads/APECFWGIUUstudyNov2008.pdf.
3. Radio Australia, Feb, 28, 2013.
   Seafood News, Feb, 27, 2013.
4. Available at www.nauticalcharts.noaa.gov/csdl/mbound.htm.
5. See www.science.gov/topicpages/e/economic+exclusive+zone.html.
6. Via a shiprider agreement, a law enforcement officer (the shiprider) is embarked on a patrol vessel sailing a national flag different from the nationality of the shiprider.

In the Spirit of Cooperation

The North Pacific Coast Guard Forum.

by Mr. Michael Argüelles
International Affairs Specialist
U.S. Coast Guard Pacific Area

Since 2000, the North Pacific Coast Guard Forum has brought together six countries in the North Pacific—Canada, the Peoples' Republic of China, Japan, Republic of Korea, Russia, and the United States—to address issues of mutual concern. Since all nations benefit from the secure use of the oceans, they bear a common responsibility for maintaining maritime security by countering threats in this domain. Additionally, as no country has the resources, authorities, and jurisdiction to combat all threats on the North Pacific, challenges like high-seas drift net fishing, illicit trafficking, and supply chain security are multilateral issues that are best overcome through collaboration.

Hence, the North Pacific Coast Guard Forum fosters multilateral cooperation through established working groups that focus on combined operations, information exchange, combating illicit trafficking, emergency response, maritime security, and fisheries enforcement. Numerous bilateral and multilateral operations and exercises have been conducted since the forum began, as a result of its framework and thanks to the enhanced relationships that have developed among the nations.

How it Works

Forum work is accomplished during the course of the year by functional area experts from the respective institutions meeting in work groups. The participating countries meet twice annually, once in spring at the staff-level experts meeting, and the other time in fall at the service chief-level summit meeting. While the summit also includes work group meetings, it serves as an opportunity for heads of the respective institutions to meet, provide direction, and affirm the activities of the experts.

For example, as a result of the forum, maritime law enforcement officers from the People's Republic of China embark on U.S. Coast Guard cutters where they join the USCG boarding teams for inspections of Chinese fishing vessels. As another example, both the Japanese Coast Guard and the

The crew aboard a Chinese fishing vessel tends to fishing nets prior to a Coast Guard cutter law enforcement boarding. U.S. Coast Guard photo.

Coast Guard CAPT Diane Durham, right, commanding officer of the Coast Guard Cutter *Rush,* shakes hands with a China Fishery Law Enforcement Command officer. U.S. Coast Guard photo by Seaman Justin Fields.

USCG Rear Admiral Charles Ray, right, speaks with Korea Coast Guard Senior Superintendent In Tae Yeo and Senior Police Officer Son Young Im at a North Pacific Coast Guard Forum meeting. U.S. Coast Guard photo by Mr. Michael Argüelles.

Canadian Coast Guard dedicate open-ocean surveillance flights that provide cuing data for USCG high-endurance cutter patrols. These ships and aircraft are primarily on the lookout for large-scale, high-seas drift net fishing, a practice that utilizes enormous nets suspended for miles in open water and indiscriminately kills large amounts of fish and other marine life such as porpoise and turtles.

In addition, numerous bilateral and multilateral operations and exercises have focused on transnational crime, maritime security, and maritime governance issues including anti-piracy and armed robbery against ships, drug interdiction, migrant interdiction, marine safety, and environmental protection.

Ultimately, the North Pacific Coast Guard Forum is about economy of force and securing cooperation that promotes collaboration with maritime operations in the vast expanse of the Pacific. "The North Pacific Coast Guard Forum represents exactly the type of multilateral security cooperation that is called for in the Pacific region," said Rear Admiral Charles Ray, deputy commander, U.S. Coast Guard Pacific Area. "It is essential to ensure the free exchange of commerce, the mutual stewardship of living marine resources, and the mutual safeguarding of member nations from illegal trafficking."

Success Stories

In July 2012, the crew of U.S. Coast Guard Cutter *Rush*, with Chinese Fisheries Law Enforcement Command, embarked shipriders, sighted a Chinese fishing vessel in the North Pacific Ocean, and boarded the vessel in accordance with the Western and Central Pacific Fisheries Commission's high seas boarding and inspection procedures. As a result, the fishing vessel was seized for large-scale high-seas drift net fishing. The vessel was targeting albacore tuna, using 10 miles of large-scale drift nets and had already caught about 30 metric tons of albacore tuna during its current trip.

In addition, *Rush* crew members found six metric tons of shark bodies and fins onboard the vessel. Upon seizing the vessel, the 17th Coast Guard District transferred custody to two patrol vessels from the China Fishery Law Enforcement Command.

In September 2011, the U.S. Coast Guard received a report from Japanese officials stating one of their aircraft had sighted two vessels engaged in illegal drift net fishing. Photographs captured two Indonesian-flagged vessels actively fishing in a conservation area.

The Coast Guard Cutter *Munro* deployed in response, and crew members boarded one of the vessels, under the authority of the Western and Central Pacific Fisheries Commission Boarding and Inspection scheme, as Indonesia is a cooperating nonmember and the vessel was in clear violation of conservation and management measures prohibiting large-scale pelagic drift net fishing.

***Munro's* crew also deterred the other vessel actively engaged in high-seas drift net fishing, but was unable to intercept and conduct a boarding.**

North Pacific Coast Guard Forum delegations meet. U.S. Coast Guard photo by Mr. Michael Argüelles.

About the author:
Mr. Michael Argüelles has more than 22 years of military service in many capacities, most notably as a marine safety/prevention officer. He currently serves as the international affairs specialist at U.S. Coast Guard Pacific Area and participates in the North Pacific Coast Guard Forum, as overall coordinator and in the Secretariat Working Group. Mr. Argüelles also acts as the North Pacific Coast Guard Forum conduit to the PACAREA senior staff, DCO-I, and Coast Guard districts, and supports forum exercises and operations.

Border Security Versus Seafarer Shore Leave

Mariner, industry, and government viewpoints.

by CDR Rob Smith
U.S. Coast Guard
Office of Operating and Environmental Standards

Mr. Joseph Keefe
Editor
Maritime Professional and Marine News

Father Sinclair Oubre
Diocesan Director
Apostleship of the Sea

Following 9/11, security restrictions on seafarers impacted their ability to go ashore. Additionally, in some quarters, seafarer access is perceived as a significant threat to national security, while shore leave is merely a convenient luxury.

Should seafarers have the right to go ashore?

The Government's Perspective

The Maritime Transportation System is Vulnerable

Ship traffic in and out of the U.S. came to a standstill after Sept. 11, 2001, because the federal government needed to assess the potential threat for further damage. Days and then weeks went by as government agencies worldwide carefully screened ships, cargos, supply chains, and people.

In the United States, people called upon the government for action and pressed for stalwart screening initiatives that would prevent terrorists or dangerous substances from entering the country. Perceptions changed and thousands of international mariners, who were once looked upon as not threatening, were now seen as a collective potential vulnerability.

Chief Petty Officer Adam Dixon and Petty Officer David Houck check the passport of a crew member aboard a cargo vessel from Hong Kong during a security boarding at the Port of Anchorage. U.S. Coast Guard photo by Petty Officer Sara Francis.

The Maritime Transportation Security Act of 2002

The Coast Guard has been responsible for U.S. port and waterway security since the Espionage Act of 1917. After World War II, the Magnuson Act of 1950 charged the Coast Guard with the ongoing mission to safeguard ports, harbors, vessels, and waterfront facilities from accidents, sabotage, or other subversive acts.[1] Following 9/11, these authorities took on new importance.

The Maritime Transportation Security Act (MTSA) of 2002 established new requirements for vessel and waterfront facility security plans, mandated biometric transportation security cards to access secure areas of vessels and terminals, and imposed cargo screening and cargo information requirements.

Facility Security Plans

Additionally, to comply with the Maritime Transportation Security Act, waterfront facilities must submit facility security plans to the local U.S. Coast Guard captain

of the port. The plans must include requirements for interfacing with ships, establish restricted areas, and note cargo handling, bunkering, and personnel screening procedures.

What this means is that seafarers who are requesting permission to step off a ship at a U.S. terminal must receive express permission from the terminal owner, before doing so, and their movements would be regulated by terminal security personnel. Additionally, facility owners are responsible for coordinating shore leave for vessel personnel or crew change-out and access through the facility for visitors to the vessel, as these movements would be communicated in advance of the vessel's arrival.[2]

Transportation Worker Identification Credentials

Starting in 2007, the Coast Guard began to enforce new regulations that mandated workers possessing Transportation Worker Identification Credentials (TWIC cards) would only be allowed unescorted access to vessel and facility secure areas. Moreover, all U.S. seafarers were required to enroll and possess a TWIC card to hold a valid Coast Guard merchant mariner's credential. From the government's perspective, U.S. mariners should never have had problems with shore access, assuming all other arrangements, coordination, and regulations were followed.

However, for foreign seafarers who are not eligible to hold TWIC cards, shore leave at a MTSA-regulated waterfront facility was not so easy. Additionally, post 9/11 policy changes prevent mariners from going ashore without a valid visa.

Cost of Freedom

Coast Guard facility security regulations on unescorted access became the primary reason, other than visa issues, why seafarers could not go ashore.

Basically, to go ashore, foreign seafarers and many U.S. seafarers holding TWIC cards were required to have escorts to move from the ship to the front gate of the waterfront facility.

This escort was generally arranged at significant cost, often times reaching $500 per movement.[3] As a result, several companies emerged, offering third-party, bonded TWIC card holders, as approved waterfront facility escorts. For seafarers without TWIC cards, escorts represented their only opportunity to go ashore.

Fortunately, many seafarer benevolent organizations such as port chaplains and other service organizations, recognized the human rights issue and worked with cooperating terminals to provide escort services. The Coast Guard also published a series of national and local guidance documents to compel compliance and facilitate shore leave. While terminals and vessel representatives cooperated and found methods to facilitate shore leave for mariners, some facilities were unable to provide access without costly third-party escorts.

Coast Guard Authorization Act of 2010

On January 5, 2010, Congress passed the Coast Guard Authorization Act of 2010. Section 811 contained a provision called Seamen's Shoreside Access:

> "Each facility security plan approved under section 70103(c) of title 46, United States Code, shall provide a system for seamen assigned to a vessel at that facility, pilots, and representatives of seamen's welfare and labor organizations to board and depart the vessel through the facility in a timely manner at no cost to the individual."

The Coast Guard is developing a proposed rulemaking to amend Title 33 CFR Subchapter H requirements that will implement this law and ultimately improve seafarer shore leave.

The Mariner's Perspective

Father Sinclair Oubre
Diocesan Director
Apostleship of the Sea

Disclaimer: ***The views and opinions expressed in this perspective are those of the author and do not necessarily reflect the official policy or position of any agency of the U.S. government.***

Mariner Stereotypes are Destructive and Costly

To design a security policy, one must consider the area to be secured, the physical and human resources that are available

Crewmembers are rarely able to join with the rest of the Christian community for the beginning of Lent. However, the M/V *Garzia Bottigliere* crew celebrated Ash Wednesday and the beginning of Lent, while docked in Port Arthur, Texas. Photo courtesy of the Apostleship of the Sea - Diocese of Beaumont.

The Facts

Father Sinclair Oubre
Diocesan Director
Apostleship of the Sea

- **Seafarers are well-trained professionals, entrusted with assets worth tens of millions of dollars.**
- **They are invited by the local maritime facility to deliver or load cargoes.**
- **Seafarers consistently meet challenges, such as inclement weather, and still deliver their cargoes on time and in good condition to the final destination.**
- **U.S. mariners have TWICs and therefore have been subjected to extensive background checks.**
- **All foreign mariners are screened 92 hours before U.S. arrival.**
- **For a foreign mariner to go ashore, he or she must obtain a D-1 visa from the Department of State. As part of the issuing process, the mariner undergoes an extensive background check.**
- **A foreign seafarer who possesses a D-1 visa can only go ashore after he or she has been searched by a Customs and Border Protection officer and receives a shore pass.**
- **The Government Accountability Office stated in its 2011 report: "…to date there have been no terrorist attacks involving seafarers on vessels transiting to U.S. ports and no definitive information to indicate that extremists have entered the United States as seafarer non-immigrant visa holders."[1]**
- **Seafarer centers' surveys concluded that 91.3 percent of all detentions are related to a lack of D-1 visa, 4.6 percent are related to ship or shipping company restrictions, and only 4 percent are related to Customs and Border Protection action.[2]**

Endnotes:

1. *Maritime Security: Federal Agencies Have Taken Actions to Address Risks Posed by Seafarers, but Efforts Can be Strengthened.* Washington, DC: U.S. Government Accountability Office, GAO -11-195, January 2011.
2. Center for Seafarers' Rights. *2013 Shore Leave Survey.* New York/New Jersey: The Seamen's Church Institute. Available at www.seamenschurch.org/sites/default/files/sci-shore-leave-survey-2013-web.pdf.

Hessbeck/iStock/Thinkstock

to maintain security, and the profile of the person(s) who are the focus of that policy. Too often, however, seafarers are subject to unfortunate stereotypes. The bottom line, though, is that business leaders would not entrust a ship and its cargo, worth many millions of dollars, to anyone who doesn't hold internationally recognized training certificates and credentials.

Seafarers spend a significant amount of time, money, and effort training to maintain their credentials. In fact, the lifestyle of a mariner closely mirrors any member of an airline crew. Seafarers are well trained in their profession, entrusted with expensive vessels and valuable cargoes, and they perform essential services to maintain quality.

Too often maritime security plans focus on restricting mariners, rather than partnering with them to promote security.

The Ship Owner's Perspective

Mr. Joseph Keefe
Editor
Maritime Professional and Marine News

***Disclaimer:** The views and opinions expressed in this perspective are those of the author and do not necessarily reflect the official policy or position of any agency of the U.S. government.*

The Hidden Costs of Denied Shore Leave

The ultimate cost of shore leave denied to the thousands of foreign mariners goes far beyond their inconvenience and frustration. While the impact is difficult to measure, it is real and that invoice will come due soon enough. In the meantime, ship owners are footing the tab in more ways than one.

Retention/Recruitment

If denied shore leave is one of the hottest issues facing the shipping world today, then right behind it (and related to it) comes seafarer retention and recruitment. GAO estimates as many as 5 million seafarers arrive at U.S. ports annually, and about 20 percent of them work on cargo ships. Virtually all of them are noncitizens who are routinely denied shore leave under the guise of national security concerns.

Foreign-flagged vessels, unlike their U.S. counterparts, typically sign on seamen for six month to one year periods, meaning that a seaman traveling regularly back and forth to the U.S. might not ever get ashore during that stretch.

Faced with this reality, on top of piracy threats and the ever-growing regulatory burden, many seamen choose not to come back. So, countless mariners are lost from the work pool—leaving employers to scramble for replacements—most of whom are lesser-qualified candidates. The cost of this revolving-door employment ultimately affects the entire supply and logistics chain.

Unequal Treatment of Foreign vs. U.S. seafarers

For U.S. mariners, the issue of shore leave is rarely a problem, beyond the hassle of finding a reasonably priced ride into town. U.S. mariners can flash their TWIC, which is usually sufficient proof that they have been vetted to the maximum extent possible. Most foreign seamen (especially those who might not know where their next voyage will take them) don't have D-1 visas, especially since it is so expensive (as much as $160), time-consuming, and requires an interview at a U.S. consulate.[4] Beyond this, some facilities charge as much as $450 to facilitate shore leave, contrary to section 811 of the 2010 USCG Authorization Act.[5]

To be fair, Coast Guard efforts to ensure facility security plans provide adequate procedures for seafarer shore access have had their intended effect. By all accounts, terminal restrictions have been greatly reduced since 2009. Even so, according to the Seamen's Church Institute, the vast majority of recorded shore leave denials stemmed from seafarers lacking visas.[6]

However, the visa problem could easily be solved. Following the 9/11 attacks the International Labor Organization (ILO) adopted a Seafarers' Identity Documents Convention, commonly known as ILO-185. For various reasons, however, the U.S. has not ratified ILO-185 and remains one of the few countries in the world that still require seafarers to obtain a visa as a precondition for shore leave.

Far-reaching Implications

The Maritime Labor Code (MLC) 2006 came into effect on August 20, 2013, and provides comprehensive rights and protection at work for the world's 1.2 million seafarers. This new labor standard consolidates and updates more than 68 international labor standards related to the maritime sector adopted during the past 80 years. All of that said, the U.S. has not ratified the code and it's unknown if or when it will do so in the foreseeable future.

For the relatively few U.S.-flagged vessels that still move cargo in the international trades, the American stance on the new MLC Code is problematic at best. The Coast Guard has issued documentation to help ships demonstrate compliance when entering a foreign port. With that part potentially solved, the issue of whether the U.S. treats all seafarers in a fair and impartial manner remains. And, continuing the relatively harsh U.S. shore leave policies imposed on foreign seamen is likely to impact the treatment of U.S. flag interests abroad, when MLC enforcement ramps up. How that plays out is anyone's guess.

Safety

For seafarers already reeling under the weight of regulatory burdens and the fear of criminalization and long engagements without relief, denied shore leave may be the proverbial last straw. In an era of historically low charter rates, the increased training costs borne by ship owners may not be immediately felt by the charterer or its ultimate customers, but they will be felt when poorly trained or under-qualified mariners take the place of those who, faced with a declining quality of life aboard, decide to pack it in.

Today's merchant vessel comes complete with dynamic positioning, dual fuel technology, LNG bunkering, ECDIS and electronic navigation, environmental control areas, and myriad advances that have forever changed the seafarer's job. To think that seafarers can be easily replaced in this climate is foolhardy and dangerous. Poorly trained or inexperienced mariners may eventually make mistakes, and, on the water, this can prove costly or even fatal.

As far as owner/operator costs are concerned, an unsafe ship, manned by inexperienced mariners can lead to more frequent protection and indemnity claims and eventually higher insurance premiums. Such a vessel may also end up on port state watch lists, which results in more frequent and typically more stringent inspections. For a ship owner already struggling financially, this can be a death spiral.

Looking Ahead

Defining the threat will help solve the problem. The Coast Guard and Customs and Border Patrol both agree that the number of absconders and deserters who have left foreign registered ships in any given year is staggeringly low (about 50 in 2009), considering the millions of mariners who touch our shores annually.[7] With that said, one deserter, who could impact national security, is one too many. However, there are better ways to approach the issue than the draconian,

U.S. Coast Guard Petty Officer Brian Hennessy (foreground) inspects passports on a cargo ship. U.S. Coast Guard photo by Petty Officer Mike Lutz.

all-encompassing shore leave denial that is the rule and not the exception at U.S. ports.

The job of going to sea has arguably never been more difficult. Seafarers arriving at U.S. ports without reasonable access to downtime ashore endure low morale, but the real cost is much higher. Safety and manning standards, insurance costs, ill-will abroad, and a measurable weakening of the supply chain that links this nation to the rest of world, is surely the unintended byproduct of a misapplied U.S. security standard for seafarers. Those costs are first felt by those who run commercial vessels. Eventually, it will touch us all in one way or another.

About the authors:
CDR Rob Smith is the division chief of the Vessel & Facility Operating Standards Division, U.S. Coast Guard headquarters. He is a 1992 graduate of the U.S. Merchant Marine Academy, holds a B.S. in maritime transportation and two M.S. degrees. While assigned to Coast Guard Sector Houston-Galveston, CDR Smith oversaw implementation of the 2009 enforcement of TWIC and MTSA regulations, which affected mariner shore leave and access to vessels on the Houston Ship Channel.

Father Sinclair Oubre is an able seaman in the U.S. Merchant Marine. He served on the Merchant Marine Personnel Advisory Committee for 16 years. Father Oubre is a Catholic priest of the Diocese of Beaumont, Texas, where he has headed the Apostleship of the Sea ministry to seafarers. He sits on the MSU Port Arthur Waterway Advisory Committee where he advocates for shore leave, seafarer welfare, and commercial fishing concerns.

Mr. Joseph Keefe is a licensed mariner and a 1980 graduate of the Massachusetts Maritime Academy. Mr. Keefe brings more than 30 years of experience in the maritime industry. He started out as a deck officer on a variety of platforms including service with the Military Sealift Command and a major oil trading and transportation company. He is the editor of the Maritime Professional *and* MarineNews *print magazines.*

Endnotes:

1. Missions, Maritime Security, United States Coast Guard, Department of Homeland Security, June 28, 2013.
2. Title 33 Code of Federal Regulations §105.200(b)(9).
3. Center for Seafarers' Rights, *2013 Shore Leave Survey*. New York/New Jersey: The Seamen's Church Institute. Available at www.seamenschurch.org/sites/default/files/sci-shore-leave-survey-2013-web.pdf.
4. Visit the Department of State's website at http://travel.state.gov/visa/temp/types/types_1263.html#temp.
5. Reported by Deacon Wayne Lobell of the Apostleship of the Sea – Archdiocese of New Orleans for one of the facilities along the Mississippi River.
6. 2013 Shore Leave Survey. The Seamen's Church Institute, Center for Seafarers' Rights, October 2013. Available at www.seamenschurch.org.
7. *Federal Agencies Have Taken Actions to Address Risks Posed by Seafarers, but Efforts Can Be Strengthened*. Washington, DC: United States Government Accountability Office. Report to the Ranking Member, Committee on Homeland Security, House of Representatives; GAO 11-195, January 2011.

The National Cargo Bureau

Partnering to achieve maritime domain awareness.

by Mr. Ian Lennard
President
National Cargo Bureau

The maritime domain is vast, complex, and extends well beyond traditional waterways. It encompasses all things on, under, or bordering a sea, ocean, or other navigable waterway including all maritime related activities, infrastructure, people, cargo, vessels, and other conveyances. As such, the maritime domain is a vital pipeline necessary for a strong national economy.

Maritime domain awareness predates 9/11 and is defined as the effective understanding of anything associated with the maritime domain that could impact security, safety, the economy, or the environment. Maritime domain awareness has been an essential part of a national strategy for maritime security, which is an outgrowth of the Coast Guard's special interest vessel tracking program. The initial study examined the means by which specific vessels could be effectively tracked in the broad approaches to the United States.

In the post-9/11 era, maritime domain awareness was added to service priorities for the Coast Guard and radically altered its scope and objectives. However, unlike the immediate aftermath of 9/11 when resources were freely available to address homeland security deficiencies, the Coast Guard now operates in a completely different budgetary environment. Today, fiscal restraints leave little choice but to carefully examine the assets and resources devoted to maritime domain awareness. Therefore, it is critical that the U.S. Coast Guard continues to foster and cultivate marine security relationships.

Formalizing the Partnership

For example, on September 23, 2002, the National Cargo Bureau (NCB) signed a maritime security memorandum of agreement with the U.S. Coast Guard, which recognized that NCB has exceptional experience with, and a deep understanding of, the maritime domain. In 2013, a second extension enhanced maritime domain awareness

The National Strategy for Maritime Security

Collectively, five actions achieve strategy objectives:

- **enhance international cooperation,**
- **maximize domain awareness,**
- **embed security into commercial practices,**
- **deploy layered security,**
- **assure continuity of the maritime transportation system.**

These are not stand-alone activities. Maritime domain awareness is a critical enabler for all strategic actions. Ultimately, the backbone of protecting the United States from maritime threats is an active, layered defense. Maritime domain awareness is the critical link in achieving this effective defense through persistent awareness and decision superiority.

Maritime domain awareness:

- **entails knowledge in all aspects of the maritime domain;**
- **requires knowledge of people including vessel crew, passengers, owners, and operators;**
- **necessitates knowledge of cargo and the cargo supply chain infrastructure (facilities, services, systems, vessels, and other conveyances);**
- **consists of knowledge of the operating environment, which includes weather, environmentally sensitive areas, and living marine resources;**
- **requires knowledge of shipping routes, migration routes, and seasonal changes;**
- **provides the ability to recognize and analyze threats and challenges from terrorism, illegal fishing, narcotics smuggling, and illegal migration.**

National Cargo Bureau surveyor Captain Emily Lai tests water density on a dry bulker. NCB surveyors work in the maritime domain on a daily basis. Photos courtesy of the National Cargo Bureau.

National Cargo Bureau Focus

The National Cargo Bureau is not primarily a security focused organization, but is rather an organization concerned with safety. It was created in 1952 as a not-for-profit organization with a mission of safety of life and cargo at sea. The bureau was created to render assistance to the U.S. Coast Guard in discharging its responsibilities under the 1948 International Convention for Safety of Life at Sea and for other closely related purposes.

and strengthened the maritime security posture throughout U.S. ports.

Following the signing of the 2002 memorandum of agreement, former Commandant of the Coast Guard Admiral Collins addressed the audience at a National Cargo Bureau board of directors meeting: "Safety and security are really two sides of the same coin. We can apply the same benefits of partnership to security issues as we have done to issues of safety. You have a great deal of knowledge and understanding of cargo, especially hazardous cargo. Since 9/11, that has moved right to the forefront of our attention. You are a key asset in expanding our awareness of the maritime domain through your knowledge of ships, marine operations, and cargo. Maritime domain awareness is vitally important to gather what knowledge we can to understand what our threats and vulnerabilities are on the waterfront. We must be able to distinguish what is normal and what is not."

Ask the Experts

Of course, those with the most experience in a particular element of the maritime domain (such as cargo) are in the best position to determine what is normal. Cargo at one time was break bulk, but it is now predominantly containerized. Additionally, ships are larger today and their cargoes are more complex than ever.

Many companies use NCB services to keep cargoes "normal," meaning well documented, safe, and secure. The more the maritime domain stays normal, the more the Coast Guard can focus its attention and resources on what is not normal.

About the author:
Mr. Ian Lennard is the president of National Cargo Bureau. He has been with the bureau for 16 years in various capacities. He holds a B.S. in business/economics from S.U.N.Y. at Plattsburgh and a Juris Doctor from Brooklyn Law.

Cargoes of numerous shapes and sizes with varying hazards pass through the maritime domain.

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Transboundary Pollution Response

Managing threats that respect no boundaries.

by CAPT John Slaughter
Chief
U.S. Coast Guard 7th District
Planning and Force Readiness Division

LCDR Callie DeWeese
Deputy Chief
U.S. Coast Guard Office of Marine Environmental Response Policy
International Spill Coordination Division

There are times when maritime pollution incidents can affect or threaten the waters or coastal areas of more than one country. Consequently, the challenges of responding to these kinds of incidents can increase when international laws and national diplomacy are overlaid on the situation.

Therefore, the U.S. Coast Guard, the Department of State (DOS), and other federal agencies are collaborating to effectively manage and respond to transboundary pollution incidents—regardless of where they originate. To do this, the Coast Guard's Office of Marine Environmental Response Policy works with the Office of International and Maritime Law, the State Department's Bureau of Oceans and International Environmental and Scientific Affairs (specifically the Office of Ocean and Polar Affairs), and appropriate country desks at DOS to implement various international agreements. These agreements can be bilateral or multilateral[1] joint contingency plans (JCPs), which support operational plans within the framework of the approved district-level developed agreements.

The Challenges

International laws related to transboundary pollution are complex. Moreover, each incident presents unique factors, which makes generalizing the subject very difficult. Presently, binding international agreements address forms of pollution, but they do not always cover specific details such as strict liability, compensation, or response activities. In fact, these agreements may also exclude activities on the continental shelf such as oil and gas drilling. Other complicating factors include exerting jurisdiction on activities occurring outside recognized maritime boundaries.

For example, many companies that drill for oil and gas are actually owned by their respective governments and do not necessarily conduct operations in their own waters, so the U.S. relationship with adjacent nations can affect pollution response.

The Process

The Coast Guard must first obtain a "Circular 175" authorization from the State Department's Office of the Legal Adviser, before it starts any discussions with foreign nations.[2] To obtain this authorization, the Coast Guard must submit a memorandum of request through the appropriate DOS office to an official at the assistant secretary level or higher. This process can include many iterations and will generally take three to six months to complete.[3]

Once DOS grants this authority, the Coast Guard begins negotiations with appropriate agency representatives from the other country (or countries) to develop a new agreement or amend an existing one. Typically, Coast Guard headquarters and district workgroups and our counterparts in the other country's responsible agency for maritime pollution response hammer out the details.

Mutual Aid

The *Deepwater Horizon* oil spill highlighted the importance of international stakeholder planning and coordination to ensure maximum resource availability and utilization during a catastrophic pollution event.

Several nations stepped forward to assist the United States during the incident, offering equipment, technical expertise, and general assistance. Our international partners' generosity cannot be overstated; however, the procedures for requesting and receiving emergency assistance during the incident were cumbersome and inefficient.

Lessons Learned

Given today's robust worldwide oil exploration initiatives and transportation patterns, the international community must be prepared to address responder challenges under myriad conditions and in locations around the world. An important lesson gained from this incident was the need for a common lexicon of equipment terminology and an international equipment inventory.

So, at the IMO's Marine Environment Protection Committee session in 2011, the U.S. proposed developing internationally accepted guidelines for international offers of assistance in response to a marine oil pollution incident. Subsequently, the committee included these guidelines in the 2012–13 agenda for the Oil Pollution, Preparedness, Response and Cooperation-Hazardous and Noxious Substance Technical Group.

Today, a U.S.-led workgroup is developing the guidelines, which will be designed so that any nation confronted with a large and/or complex oil spill incident can manage requests for spill response resources, including offers of assistance from other countries and organizations. The initial guidelines completion due date is summer 2014.

The Purpose

A joint contingency plan promotes a coordinated system for preparing for and responding to a transboundary pollution incident. Each plan meets the specific needs of the country and reflects the unique way it responds to maritime pollution.

Most importantly, the plans provide procedures for a country to request response assistance. This assistance comes on a cost-reimbursable basis and must be requested and approved through proper diplomatic channels. Additionally, all plans are intended to amplify and complement existing international agreements and pollution preparedness and response frameworks and regulations already established in each country.

The Plan

A typical plan includes roles and responsibilities, exercise and training, notification procedures, funding, public information coordination, and post-incident reporting. If a plan covers an area that falls under the jurisdiction of more than one Coast Guard district, then we must implement regional annexes. For example, the Canada/United States Joint Marine Pollution Contingency Plan contains five regional annexes that are managed by the 1st District (North Atlantic), 9th District (Great Lakes), 13th District (Pacific Northwest), and the 17th District (Alaska and Arctic Waters). On the other hand, District 17 manages the JCP with Russia, so no regional annex is required.

The Coast Guard also maintains a bilateral agreement with Mexico, and District 8 and 11 commanders must devise, manage, and implement the annexes in conjunction with their counterparts. Additionally, these annexes must complement existing area contingency plans and provide specific, detailed information on bilateral or multilateral coordination. For example, the national-level plan may simply state that clearance procedures for transboundary movement of response equipment or personnel should be coordinated locally. District commanders and designees will then work at the local level with U.S. Customs and Border Protection, other applicable U.S. agencies, and their counterparts in other countries to determine the appropriate pre-clearance or approval procedures that should take place for transboundary movement during a joint response.

Who Does What

Most plans reflect the premise that each country will fund its own pollution response operations in waters under its jurisdiction. Therefore, although we may be coordinating our response efforts with another country, the U.S. will be responsible for clean up in its waters and the other country will do the same.

And the Work Continues

The Coast Guard has a host of joint response plans that focus on building international partnerships with neighboring countries. Generally, these agreements elaborate on International Maritime Organization guidelines or worldwide treaties such as the Oil Pollution Preparedness, Response and Cooperation Convention, which has been in force since 1995 and ratified by 105 countries.

The Coast Guard remains very active furthering international outreach, with much of the recent focus on the possible impacts of offshore oil and gas exploration in the Arctic and Caribbean regions. As a member of the U.S. delegation to the Arctic Council, the Coast Guard helped draft the Agreement on Cooperation on Marine Oil Pollution Preparedness

and Response in the Arctic, adopted in May 2013.

In other efforts, the Coast Guard Office of Marine Environmental Response Policy, members of District 7, and the Bureau of Safety and Environmental Enforcement worked with Cuba, the Bahamas, Mexico, and Jamaica to develop the Wider Caribbean Region Multilateral Technical Operating Procedures for Offshore Oil Pollution Response, finalized in July 2013. This document is nonbinding in nature, but identifies areas of joint response from participating nations to a transboundary oil spill from offshore oil and gas exploration and includes responder contact information. Moreover, the document also identifies the need for further planning through notification drills and joint exercises. To promote multilateral collaboration to protect people and the environment, participating countries' offshore petroleum health and safety regulators will share information to foster best sustainable safety performance programs.

A drilling rig conducts operations off the coast of Cuba. U.S. Coast Guard photo.

For the Future

International agreements for pollution response are essential elements to secure the U.S. environment and economy. Agreements take time, as countries often have different objectives, priorities, and their own agreement mechanisms. Building relationships with domestic partner agencies and counterparts from other countries has its challenges, but the end is rewarding.

Delegates from the United States, Cuba, Mexico, and the Bahamas participate in a regional workgroup on oil spill prevention in Nassau, Bahamas. U.S. Coast Guard photo.

Ironically, it would be ideal if all of these joint plans remain on the shelf. Nevertheless, if a response is needed one day, it is comforting to know that we have laid down the groundwork for fully coordinated joint responses to mitigate any environmental damage, regardless of where the incident started.

About the authors:

CAPT Slaughter is chief of the Planning and Force Readiness Division at the 7th District in Miami, Fla. He has been part of the multilateral planning team in the Northern Caribbean Region since 2011, and has been working with counterparts from other countries to develop shared oil spill operational procedures.

LCDR DeWeese is the deputy chief of the International Spill Coordination Division in the Office of Marine Environmental Response Policy at USCG headquarters. She served as a Coast Guard marine inspector and casualty investigator for 12 years and holds a master's degree in environmental resource management.

Endnotes:

1. Bilateral (between the U.S. and one other country), multilateral (between the U.S. and more than one other country).
2. Circular 175 refers to regulations DOS sets forth to ensure compliance with international treaties and agreements within constitutional and other legal limitations. For more information on Circular 175 procedures, visit www.state.gov/s/l/treaty/c175/.
3. The memo outlines the general purpose of the agreement, any problems that may be encountered with possible solutions, policy benefits and potential risks to the U.S., funding sources (if any) that will be committed by the proposed agreement and potential environmental impacts that may arise from the agreement and such. This description follows a request to negotiate, conclude, amend, extend or terminate the agreement, as appropriate. The proposed text of the agreement and any other pertinent background information attaches to the memorandum.

Securing the Port

Managing port security on the Mexican border.

by LCDR Erich Stein
Chief, Waterways Management
U.S. Coast Guard Sector Corpus Christi

The Port of Brownsville, Texas, is at the end of a 17-mile, deep-draft shipping channel that meets the Gulf of Mexico at the Brazos Santiago Pass, at the southernmost tip of the state. At Brownsville, Mexico's land transportation is linked with the U.S. Gulf Intracoastal Waterway. As such, the port provides a convenient gateway to move goods between Mexico and the United States.

From a law enforcement perspective, proximity to the border coupled with deep-draft foreign vessel traffic, makes law enforcement and transportation security risks challenging. In fiscal year 2012 alone, Coast Guard enforcement officers interdicted 22 illegally fishing Mexican vessels, recovered nearly 30 nautical miles of illegal fishing gear, intercepted more than 1,200 lbs. of marijuana, and transferred 122 undocumented aliens to Customs and Border Protection agents for enforcement action.[1]

View of the Port of Brownville. Coast Guard photo by LT Dallas Smith.

Port Security Tools

Senior officials promulgated the South Texas Area Maritime Security Plan to ensure effective governmental and private sector measures to deter, detect, disrupt, respond to, and recover from a transportation security incident across the intermodal marine transportation system (MTS).[2]

Forward-leaning sensors deployed on regional, state, local, and federal aviation and marine platforms offer an expanded perimeter to alert officials operating in the exclusive economic zone, the port, and border areas about potential transportation security incidents. Further, U.S. Department of Homeland Security (DHS) officials established the Corpus Christi Regional Coordinating Mechanism to leverage DHS resources within the South Texas border area of responsibility—providing a common operational picture, shared intelligence, and shared personnel/resource mission hours.

Additionally, DHS personnel recently conducted three major multi-agency operations to identify and disrupt narcotics smuggling. Operators detained several people entering the country illegally and confiscated 39 kilo bricks of cocaine, 5 lbs. of heroin, and 15 bales of marijuana.[3]

Port security officials rely on the Maritime Security Risk Analysis Model (MSRAM) to assess risk based on a comparison of threat, vulnerability, and consequence. As Texas shares a nearly 2,000-mile international border with Mexico, including the Falcon and Amistad dams and the Port of Brownsville, proper operational planning is paramount. Leveraging MSRAM data and sharing intelligence ensures resource hours and response assets are programmed to the highest-risk target areas.

Partners in Security

Foreign vessels provide notice of arrival to the Port of Brownsville, and Coast Guard boarding teams often meet these vessels offshore to ensure they have

implemented proper security plan measures for port entry. Additionally, the port maintains a captain of the port-approved facility security plan. Within this perimeter, port facilities that transfer oil or hazardous material in bulk to liquefied hazardous gas facilities or facilities receiving foreign vessel traffic must also maintain approved facility security plans. Engagement continues through annual Coast Guard security inspections and security spot checks to ensure facility security officers and staff receive proper training to execute the facility's security plans.

A Coast Guard patrol boat crew conducts intercept training. U.S. Coast Guard photo by Petty Officer Mario Romero.

These plans—port, vessel, and facility security plans—inform strategic decisions regarding law enforcement resources, creating an external perimeter critical to detecting, deterring, and responding to a transportation security incident. Additionally, these measures enable the captain of the port to set an inner perimeter for port security. Continual engagement with the area maritime security committee and security working groups strengthens partnerships and focus of effort to ensure marine transportation system safety and security in South Texas.

A Coast Guard Deployable Operations Group small boat crew provides security for Mexican shrimpers seeking safe refuge in the Port of Brownsville during Hurricane Dean. U.S. Coast Guard photo by Petty Officer Andrew Kendrick.

Security Training

In April 2013, more than 250 local, state, and federal emergency response agency representatives in the South Texas region held maritime awareness, security, and terrorism training at the Richard M. Borchard regional fairgrounds in Robstown, Texas.

Agency representatives shared their expertise, case studies, and recommendations in a secure forum to ensure South Texas is always ready to provide efficient, appropriate action to a maritime incident response.

About the author:
LCDR Erich Stein is the Waterways Management Division chief at Sector Corpus Christi, Texas. He has served in the U.S. Coast Guard for 15 years and earned his M.S. in operations research from George Mason University. He has received the Coast Guard Commendation medal, two Coast Guard Achievement Medals, and the Commandant's Letter of Commendation.

Endnotes:

1. *Federal, state, local agencies to conduct joint terrorism prevention seminar.* April 02, 2013 media advisory from Coast Guard Sector Corpus Christi available at www.uscgnews.com/go/doc/4007/1738363/Federal-state-local-agencies-to-conduct-joint-terrorism-prevention-seminar.
2. A transportation security incident results in a significant loss of life, environmental damage, transportation system disruption, or economic disruption in a particular area.
3. Recom talking point paper, August 6, 2013.

Shiprider

An innovative solution to a bi-national problem.

by CAPT Bill Travis
Commander, Coast Guard Element
Joint Transportation Reserve Unit
U.S. Transportation Command

Picture yourself as a criminal. You make money smuggling drugs, people, weapons, or cash from the United States to Canada. Your method of transportation is a small, fast boat, equipped with a reliable GPS. If the U.S. Coast Guard spots you and gives chase, all you have to do is get across the international border and you're home free.

The Coast Guard vessel will have to turn around, because the U.S. Coast Guard doesn't have jurisdiction in Canadian waters. The crew can call the Royal Canadian Mounted Police and give them a description of your boat, but you'll be long gone by the time the RCMP can get to you, if they can even find you.

Now, try this scenario: The U.S. Coast Guard sees you and the vessel is closing fast, but it doesn't matter. You've made it across the border once again, so you can throttle back and cruise on to a nice hidden cove on the Canadian shore. Only this time you have a small problem. This time, the Coast Guard vessel keeps on coming. Before you know it, you're heading to jail.

U.S. Coast Guard photo.

Thanks to the integrated cross-border maritime law enforcement operations (ICMLEO) program, also known as "shiprider," authorized embarked Canadian law enforcement officers can enforce U.S. law and authorized U.S. law enforcement officers can enforce Canadian law. This collaboration enhances their partnership and leverages resources to counter criminal activity on both sides of the border.[1]

Beyond the Border

In February 2011, President Barack Obama and Canadian Prime Minister Stephen Harper released a joint declaration, Beyond the Border: A Shared Vision for Perimeter Security and Economic Competitiveness, which spells out the ways the U.S. and Canada can collaborate to address border threats, while expediting legitimate trade and travel.[2]

The framework agreement grants authority to designated officers to enforce the domestic laws of the host country, as directed by a designated host country cross-border maritime law enforcement officer.[3]

Simply put, Shiprider grants designated law enforcement personnel the authority to enforce laws of another nation, removing one of the major obstructions that kept the good guys from arresting the bad guys. Today, a U.S. Coast Guard vessel with a Canadian ICMLEO officer aboard can come into Canadian waters and make an arrest. Similarly, a Royal Canadian Mounted Police vessel with a U.S. officer aboard can come into U.S. waters and do the same.

U.S. Coast Guard Petty Officer Andrew Peppers and Royal Canadian Mounted Police Cpl. Raj Sandhu prepare to conduct a boarding during Shiprider law enforcement operations along the Niagara River. U.S. Coast Guard photo by Petty Officer Brandon Blackwell.

Hey! We Have Rights!

Obviously, maritime security is of vital interest to the United States and Canada, and effectively guarding our shared maritime border means collaborating to ensure national security on both sides of the border. What it does not mean is ignoring each other's national sovereignty or autonomy. ICMLEO fully respects the sovereignty and the rights of U.S. and Canadian citizens. When in U.S. waters, it is always a U.S. law enforcement officer in charge, but a Canadian law enforcement officer can enforce U.S. laws under the supervision and direction of that U.S. law enforcement officer.

Coast Guard Fireman Michael Darren teaches Guatemalan and Canadian shipriders how to operate a dewatering pump. U.S. Coast Guard photo by Electronics Technician Shane Taylor.

The same holds true in Canadian waters—a Canadian law enforcement officer is in charge, but the U.S. law enforcement officer can enforce Canadian laws under the supervision and direction of that Canadian law enforcement officer.

For years, similar agreements have aided search and rescue operations and environmental pollution response, including the 1999 Memorandum of Understanding for Co-Operation Between Canada, The United States, and The United Kingdom, and the 2010 Canadian—United States Joint Marine Pollution Contingency Plan.[4]

So, Who Are These Shipriders?

Shipriders are mainly U.S. Coast Guard and Canadian law enforcement personnel who go through a rigorous agency selection process to become designated ICMLEO officers. Candidates report to the U.S. Coast Guard Maritime Law Enforcement Academy in Charleston, S.C., for the initial ICMLEO training course. However, RCMP and USCG members are not the only ones who participate. To date, members of U.S. Customs and Border Protection, the Ontario Provincial Police, the Windsor Provincial Police, the Niagara Regional Police Service, the Saint Regis Mohawk Tribal Police, and the Akwesasne Mohawk Police Service have successfully completed ICMLEO training.

Approved U.S. and Canadian instructors teach the initial training course, which includes classroom and practical exercises from case studies to mock vessel boardings. The curriculum covers applicable laws and policies, operational

procedures, information sharing, customs violations and regulations, and integrated boarding tactics.

To successfully complete the training, candidates must adapt to the criminal and privacy laws and policies of the host country in which they will be operating and understand domestic enforcement authorities and jurisdiction. Students also learn use-of-force policies, rules of engagement, and defensive tactics. Moreover, training continues after graduation. ICMLEO officers take refresher and familiarization training to stay proficient in applicable laws and policies.

Once candidates complete initial training they become designated cross-border maritime law enforcement officers. That means a designated Canadian law enforcement officer becomes a U.S. customs officer under U.S. law,[5] and a designated U.S. law enforcement officer becomes a peace officer under Canadian law.[6]

Is It Working?

Five "proof of concept" pilot programs have launched since 2005 including operations securing the 2010 G8 and G20 Summits in Ontario, the 2010 Olympic Games in Vancouver, and the 2006 NFL Super Bowl in Detroit. They validated shiprider effectiveness, enhanced bi-national law enforcement cooperation, resulted in criminal arrests, and helped enforcement officers confiscate illegal drugs, untaxed tobacco, and bulk cash. They were also critical to the recovery of an abducted child who had been transported across the U.S./Canadian border.[7]

In June 2013, integrated cross-border maritime law enforcement operations officially launched. U.S. Coast Guard law enforcement personnel along with Royal Canadian Mounted Police counterparts, kicked off shiprider operations in the Detroit, Michigan/Windsor, Ontario region and in the Blaine, Washington/Vancouver, British Columbia region.

On the Horizon

It's been said that it would be easy for the Coast Guard to protect our maritime borders with 100 percent certainty: All we need to do is shut down all maritime traffic in and out of our country.

Obviously, that cannot and should not happen. The economic impact of such an act would be crippling. Our economy requires cross-border trade and recreational activities to generate commerce. Our shared border with Canada sees an enormous amount of commercial and recreational vessel traffic, from the largest lake freighters to the smallest personal watercraft. Shiprider is an innovative solution that provides maritime security and prevents disruptions to economically critical waterways.

About the author:
CAPT Bill Travis is the commanding officer of Coast Guard Element, Joint Transportation Reserve Unit, U.S. Transportation Command. His prior assignments included chief of the Maritime Border Security Division at Coast Guard headquarters and maritime law enforcement boarding officer. He participated in multiple tours and deployments with port security units.

Endnotes:

1. Available at www.dhs.gov/xlibrary/assets/shiprider_agreement.pdf.
2. *Beyond the Border: A Shared Vision for Perimeter Security and Economic Competitiveness.* February 4, 2011.
3. Shiprider agreement.
4. Available at www.uscg.mil/d1/response/jrt/documents/AGA_signed_29JUN2010(sm).pdf.
5. 19 U.S.C.§1401(i) The terms Officer of the customs; customs officer mean "any officer of the United States Customs Service of the Treasury Department (also hereinafter referred to as the "Customs Service") or any commissioned, warrant, or petty officer of the Coast Guard, or any agent or other person, including foreign law enforcement officers, authorized by law or designated by the Secretary of the Treasury to perform any duties of an officer of the Customs Service."
6. R.S.C., 1985, c. C-46, "peace officer" includes (*c.1*) a designated officer as defined in section 2 of the Integrated Cross-border Law Enforcement Operations Act, when

   (i) participating in an integrated cross-border operation, as defined in section 2 of that Act, or

   (ii) engaging in an activity incidental to such an operation, including travel for the purpose of participating in the operation and appearances in court arising from the operation.
7. Canada Gazette, Vol 146, No. 19, September 12, 2012. Available at www.gazette.gc.ca/rp-pr/p2/2012/2012-09-12/html/si-tr68-eng.html.

Just Add Water

A recipe for border security.

by Major John C. Fetterman
Maine Marine Patrol (ret.)
Director of Law Enforcement
National Association of State Boating Law Administrators

Mr. Mark DuPont
USCG (ret)
National Director
National Association of State Boating Law Administrators BOAT Program

America's shared land borders with Canada and Mexico are approximately 25,000 miles long, and our maritime transnational border exceeds 95,000 miles.[1] These borders include some of the most intricate and complex coastlines in the world. For as long as we have been a nation, our expansive maritime border has remained an attraction for smuggling, trafficking, and illegal entry as well as an attractive point of entry for anyone seeking to do us or our economy harm.

On Sept. 11, 2001, our perspective of border security changed forever. Americans realized that day that technology was no longer the sole delivery system or the greatest threat. Vulnerability can be as simple as a single individual or group crossing our border with intent to harm our country, its infrastructure, or its citizens.

In response, the U.S. government developed numerous innovative border security approaches including:

- the Maritime Transportation Security Act of 2002,
- the Container Security Initiative,
- the U.S. Customs 24-hour Advance Cargo Manifest Declaration Rule,
- the REAL ID Act.[2]

These programs are admirable initiatives, but they are not good enough. Our government must integrate these and other programs into one cohesive, integrated overarching operations plan built upon metrics that can evaluate risk and measure success. Therefore, it is our challenge to create an integrated maritime border security strategy. Additionally, in the current budget-constrained, resource-restricted environment, we must focus on implementing true force multipliers without adding overhead.

So one may ask, how do we push layered security farther away from the dock and harbor environment? Or, how do we do it in a time when budgets are constrained and when no single agency is equipped to handle the load?

Force Multipliers

One answer lies in marine law enforcement officers. On the nation's waterways—including along international borders and ports of entry—state, county, local and tribal marine law enforcement officers are on duty patrolling, observing, and interacting with recreational boaters, commercial fishermen, vessel masters, and others. They typically patrol an

Eighteen thousand state and local officers patrol America's waterways, and become part of the integrated and layered defense of our shorelines and credentialed to a national standard. Photos courtesy of the NASBLA BOAT Program.

BOAT Program Continuing Improvement

The National Association of State Boating Law Administrators uses two methods to measure program effectiveness and to assess if training to a national standard can really impact what happens on the water:

- **We review reported student interagency collaboration.**
- **We use the Kirkpatrick model of learning assessments to assess student behavioral changes.[1]**

The Four Levels of Kirkpatrick's Evaluation Model:

1. **Reaction: what participants thought and felt about the training.**
2. **Learning: demonstrated increase in knowledge and/or skills, and change in attitude.**
3. **Behavior: observed change in job behavior due to training program. Successfully transferring knowledge, skills, and/or attitudes from the classroom to the job.**
4. **Results: the outcome achieved (monetary, performance-based, etc.) due to training program participation.**

After review, we are seeing positive behavioral change from not just our students, but also from their reported interagency collaboration in mission, response, and communication.

Endnote:

[1]. The Kirkpatrick Model is the results of studies conducted by Donald L. Kirkpatrick, professor emeritus, University Of Wisconsin. His ideas were first published in 1959, in a series of articles in the Journal of American Society of Training Directors. The articles were subsequently included in Kirkpatrick's book *Evaluating Training Programs*, originally published in 1994, Berrett-Koehler Publishers, 3rd Edition. Available at www.businessballs.com/kirkpatricklearningevaluationmodel.htm, and at the Kirkpatrick website www.kirkpatrickpartners.com.

assigned area for an entire career, so they are entrenched within their patrol area, community, and have built up social capital with local partners.

Federal assets become strained immediately when our maritime threat level rises or when a manmade or natural disaster strikes, and Coast Guard stations do not have the capability to autonomously sustain a heightened security posture for long. While a local officer may have his patrol boat tied to the pier of the very station that needs assistance, can the station commander have any assurance that utilizing local officers and assets will help meet the port security mandate and border patrol requirement? Maybe, if they have worked together long enough to have developed a relationship.

Training and credentialing America's front line of maritime law enforcement officers has become NASBLA's focus, with over 1,500 tactical operators trained in the last three years.

However, even then, the confidence is short-lived. Station commanders transfer, and the incoming command cadre does not have the same relationship with the local responders. Also, even though many of them are skilled mariners, local officers do not possess a credential that is immediately recognizable to attest to their expertise.

The NASBLA Boat Operations and Training Program

Enter the National Association of State Boating Law Administrators (NASBLA), which has represented the recreational boating program in all 50 states and six territories for more than 50 years. The state's governor appoints each NASBLA member, who then manages vessel numbering and titling, enforces state boating laws and regulations, and provides boating education access to recreational boaters.

In 2010, NASBLA embarked on developing training and credentialing for marine law enforcement and emergency rescue personnel in full compliance with the Coast Guard's own training and qualification standards. Over the course of the next two years, approximately 1,500 state, county, and local marine patrol officers were trained under the NASBLA Boat Operations and Training (BOAT) program and qualified as "tactical coxswains." NASBLA then entered their training records into a national database, which is accessible to every Coast Guard sector in the country. Tactical coxswains received a certificate and were handed a mandate. NASBLA requires that to maintain that credential, the officer must exercise those skills with area partners. The

result: trained and certified force multipliers.

Not only that, all of NASBLA's course offerings are exportable—they allow officers to train in their own boats within their own port environment, and (as happens in almost every class) with their federal, state, and local partners in a blended class. This further emphasizes and strengthens maritime partnerships.

On May 11, 2012, the United States Coast Guard signed a first memorandum of understanding with the National Association of State Boating Law Administrators, identifying the organization as the holder of national training standards for state, county, local, and tribal maritime law enforcement and emergency rescue personnel. That said, this does not give NASBLA the exclusive use of those standards. Others may also meet the same standard of delivery, oversight, and credentialing, and NASBLA welcomes those partners.

NASBLA's exportable training reaches students from multiple agencies and allows them to train in their area of responsibility (AOR) in the boats they operate everyday.

In Conclusion

The recipe for a successful security strategy rests within each American but, most importantly, in the hands and tools already present and vigilant on our nation's waterways in the form of the local, county, state, and tribal maritime law enforcement officer. More than boats and equipment, our national assets and personnel must have the knowledge and training to collaborate effectively on the nation's waterways, securing our borders and ports.

That is the recipe for maritime security and success. The tools and resources are in place—all we really need to do is add water.

About the authors:

Major John C. Fetterman (ret.) is the law enforcement director for the National Association of State Boating Law Administrators. He is a 32-year Maine Marine Patrol veteran and a former member of National Boating Safety Advisory Council. Today, he is a National Maritime Security Advisory Committee member. He is also an USCG Distinguished Public Service Award 2010 recipient.

Mark DuPont (USCG ret) is the National Association of State Boating Law Administrators' director of Boat Operations and Training. He founded Merrick Maritime Security, served as a marine patrol officer, and as Florida's Fish and Wildlife Conservation Commission chief intelligence and domestic security officer. He has trained thousands of officers and written state and national security policies and procedures.

Endnotes:

1. *America's Coast Guard: Safeguarding Maritime Security in the 21st Century.* Washington, DC: U.S. Coast Guard, 2000. Available at www.uscg.mil/history/docs/USCG/2000_USCGMaritimeSecurity.pdf.
2. The Maritime Transportation Security Act of 2002. Available at www.gpo.gov/fdsys/pkg/PLAW-107publ295/pdf/PLAW-107publ295.pdf; The Container Security Initiative. Available at www.gpo.gov/fdsys/pkg/CHRG-109shrg21825/pdf/CHRG-109shrg21825.pdf; The U.S. Customs 24-hour Advance Cargo Manifest Declaration Rule. Effective December 2nd, 2002. Available at www.cbp.gov/xp/cgov/admin/c1_archive/messages/archives/2000/jan132000.xml; The REAL ID Act. For more information, visit www.gpo.gov/fdsys/pkg/PLAW-109publ13/html/PLAW-109publ13.htm.

A Rising Tide Lifts All Boats

The international approach to U.S. border security.

by Mr. L. Stephen Cox
Legal Section Director
U.S. Coast Guard International Port Security Program

Following the 2001 terror attacks, the U.S. Congress enacted the Maritime Transportation Security Act, which tasked the Coast Guard with a number of enhanced domestic port security duties. However, Congress also recognized that a line on a map does not necessarily represent a "border" and called upon the Coast Guard to pursue security beyond our borders all the way to the ports of foreign nations frequented by U.S. shipping.[1]

> **"In the present day friendly, though foreign, ports are to be found all over the world; and their shelter is enough when peace prevails."**
>
> **—Alfred Thayer Mahan, *The Influence of Sea Power Upon History 1660-1783.***

U.S. Coast Guard Petty Officer Brady Vanderpol reviews chart-plotting and navigation with Haitian port facility security personnel. U.S. Coast Guard photo by Petty Officer Thomas M. Blue.

Today, the Coast Guard's International Port Security (IPS) Program assesses foreign port security and works to develop enhanced practices, laws, and regulations to improve U.S. border security and that of our foreign maritime trading partners. Building upon IMO's International Ship and Port Facility Security Code, the U.S. Coast Guard has developed a detailed model to help developing nations identify and address some of the more intricate aspects of port security regulation. The Model Port Security Compendium (MPSC) strengthens border security at the source—thereby protecting U.S. shipping and strengthening the global maritime transportation system.

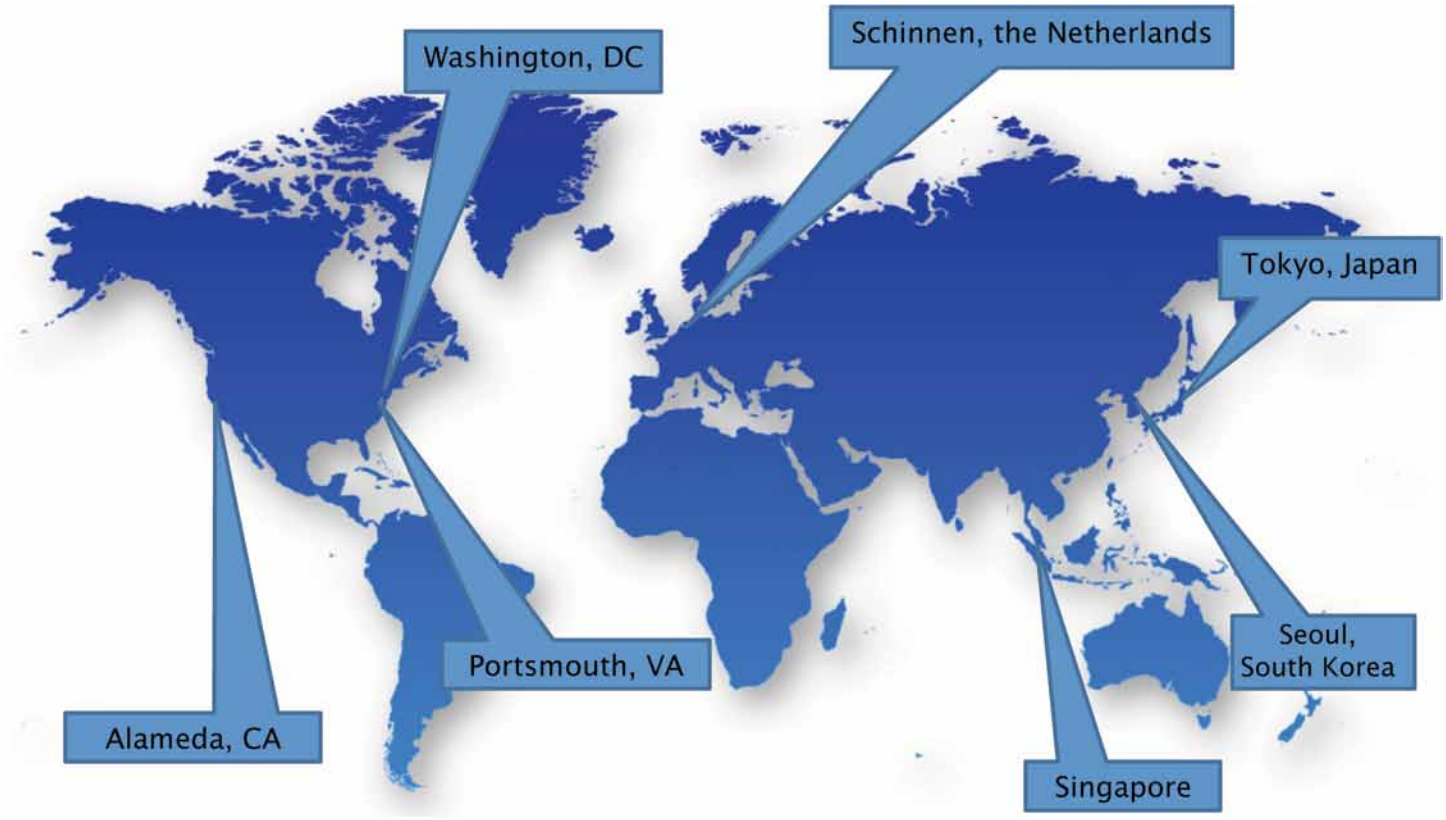
International Port Security Program

However, global maritime trade is not an accumulation of point-to-point transactions. Rather, it closely resembles an intricate web, in which containerized cargoes from one country are routinely trans-shipped through other ports, broken down, reloaded, mixed, and mingled with containers from around the world, and then reshipped aboard different carriers originating from different ports. Under these conditions, the post-9/11 U.S. faced only two options to address this seemingly overwhelming border security challenge:

- increase domestic port security measures;
- promote enhanced international ship and port security standards, thereby strengthening the integrity of the entire global maritime transportation system.

While the first task largely fell to the captains of the port, the Coast Guard created the International Port Security Program in 2005 to address the second.

By law, the Homeland Security secretary, through the Coast Guard, is required to assess the effectiveness of our foreign trading partner port's antiterrorism measures, and then



International Port Security Program offices.

notify those governments and the U.S. State Department of any lapses found, provide technical assistance to correct security deficiencies that could potentially affect U.S. port security and, if necessary, recommend conditions of entry for any vessel arriving from a foreign port that does not maintain effective antiterrorism measures.[2]

However, a nation must demonstrate governmental stability and viable security policies, before it can effectively implement such measures. Stated another way, nations lacking effective rule of law are unlikely to have effective antiterrorism measures in their port facilities. Therefore, in addition to IPS Program officer physical assessments, Coast Guard attorneys also evaluate the port security laws and regulations to ensure that proper procedures are in place to protect U.S.-bound shipping. Where governance is lacking, the Coast Guard is similarly situated to provide maritime trading partners with regulatory development advice and assistance.

International Port Security Standards

However, as the international port security concept is more than a decade old, port security discussions have evolved. While the international community undoubtedly made great improvements to port security with the advent of the ISPS Code, it is only mandatory in part and does not define offenses, suggest penalties, empower law enforcement, enable prosecutions, or allow for incident response. As a result, many developing nations that have simply adopted the ISPS Code verbatim or by reference are left without meaningful compliance enforcement or incident response measures. Relying solely on the ISPS Code, when operating abroad, the Coast Guard would be similarly limited in terms of assessment and capacity-building assistance.

In recent years, however, many countries have come to recognize the commercial value of improved port security regulatory standards and have taken steps to elevate the quality of their respective port security regulations to include specific enforcement, incident response, and compliance provisions. However, as the Coast Guard began to piece together the seemingly overwhelming library of international port security law drafted in response to 9/11, it became clear that despite philosophical differences, the various law and regulatory documents produced around the world reflected common approaches and themes regarding facility administration, prohibitions, procedures, personnel duties, and violation and offense adjudication.

Model Port Security Compendium

As a result, USCG ISP Program attorneys developed the Model Port Security Compendium (MPSC) and incorporated

international legislative best practices to provide a multinational sampling and restatement of laws that addresses ship and port security measure implementation and enforcement.

Primarily, the MPSC is an analytical tool for IPS Program international legal assessments, but it has also proved valuable in communicating detailed port security regulatory concepts to developing countries. Rather than a rigid cross-referenced code, the MPSC is a collection of stand-alone port security measures designed to allow for selective use and application under any legislative system. For example, it introduces model language to empower the national authority to conduct searches, make arrests, and prosecute violations. Similarly, the model discusses jurisdiction and procedure legal issues, before providing a sampling of draft legislation to define specific security-related crimes and associated penalties.

The Model Port Security Compendium has been tested in several African, Asian, South American, and Caribbean countries that are already adapting its language to draft their own effective port security laws and regulations.

Additionally, working in cooperation with the Asia Pacific Economic Cooperation, the Coast Guard has also developed a port security legislation workshop to engage policy makers and their legislative drafters in drafting effective port security laws and regulations. The workshop provides stakeholders an intensive two-to three-day session to address port security—adjusted to meet the specific needs of the governments with which it is conducted.

The Future of International Port Security

International port security cooperation at such levels has enhanced U.S. border security, but there are still many untapped benefits. Today, the IPS Program improves and develops partnerships within the U.S. government to find synergies among related Department of Defense and State Department components.

Likewise, the Coast Guard is engaging with the United Nations and with other regional organizations to develop the Model Port Security Compendium as an international legislative standard. In this way, the International Port Security Program is furthering international port security partnerships and strengthening border security by safeguarding ports frequented by commercial vessels.

About the author:
Mr. Stephen Cox is a civilian attorney with the Coast Guard's International Port Security Program. As legal section director, he coordinates interagency legal initiatives and represents the U.S. Coast Guard to governments and international organizations abroad. Prior to this assignment he was an admiralty law practitioner in New Orleans, La.

Endnotes:

1. See 33 C.F.R. §101.
2. *Implementing 9/11 Commission Recommendations.* Washington, DC: U.S. Department of Homeland Security, Progress Report, 2011. Available at www.dhs.gov/xlibrary/assets/implementing-9-11-commission-report-progress-2011.pdf.

Shared Awareness, Seamless Operations, Synchronized Priorities

Managing a maritime border with Canada.

by LCDR Matt White
U.S. Coast Guard 9th District

CDR Dave Beck
U.S. Coast Guard 9th District

Mr. Lorne Thomas
U.S. Coast Guard 9th District

The U.S. Coast Guard 9th District enjoys a unique area of responsibility that includes a shared international border with Canada that spans 1,500 miles.[1] Moreover, the Great Lakes represent a complex, connected, and continuous maritime system with a wide range of environments from open seas (much more like oceans than lakes) to narrow rivers. Additionally, the Great Lakes are shared by two sovereign nations. Combined with tribal interests, eight states, three Canadian provinces, and hundreds of county and local stakeholders across the region, the jurisdictional complexity is enormous. As we like to say in the 9th District, almost everything we do is watermarked by Canada.

Roughly 10 percent of the U.S. population and more than 30 percent of the Canadian population live in the Great Lakes basin, and local issues are typically bi-national.[2] Roughly 300 thousand people and $1.5 billion in trade move through our regional border with Canada, so keeping our maritime border open is critical to our economy, while challenging our national security efforts.[3]

The requisite perimeter security needs to extend the borders without thickening them. Our cooperative and coordinated efforts to execute our respective missions and mandates must have a complementary and synergistic effect on border control and governance.

In 2011, the U.S. president and the Canadian prime minister signed the Beyond the Border declaration, which clarifies our mutual priorities. The declaration makes clear that U.S. and Canadian safety, security, and resilience relies on our ability to:

- collaborate with multiple stakeholders,
- share information,
- address threats early,
- assist trade and economic growth,
- protect infrastructure,
- conduct integrated cross-border law enforcement,
- respect and value the sovereign rights of each country and its citizens.

U.S. Coast Guard CAPT Steve Wischmann (center), commander of Coast Guard Sector Buffalo, discusses jurisdictional boundaries and shared challenges along the shared U.S./Canada border with Capt. Doug Young (left), assistant chief of Staff Operations for Maritime Forces, Joint Task Force Atlantic and Lt. Col. Kevin Cameron (right) of Joint Task Force headquarters. U.S. Coast Guard photo by Chief Petty Officer Kyle N. Niemi.

We Act First to Save Lives

In March 2012, while steaming in the Canadian waters of eastern Lake Ontario, the U.S.-flagged tug *Patrice McAllister* suffered a catastrophic fire. Canadian and U.S. Coast Guard assets responded immediately. Ultimately, the professionals of the Canadian Coast Guard rescued all six crew members. Tragically, one of the crew members succumbed to his injuries from the fire.[1]

As soon as the rescue actions were complete, U.S. and Canadian officials immediately turned their attention to potential marine environmental threats. Pollution response staff stayed in contact to assess the threat and determine if it would be necessary to activate the Canada/U.S. joint marine contingency plan.

A commercial salvage vessel moves the tugboat *Patrice McAllister* across Lake Ontario. U.S. Coast Guard photo.

Fortunately, the fuel storage onboard the vessel remained intact and no pollution resulted. However, thanks to a robust bi-national exercise and review program, our shared pollution response would have been as seamless as the initial rescue.

Endnote:

1. ***Tug Patrice Mcallister Major Marine Casualty.*** **MISLE case 588131. Washington DC: U.S. Coast Guard and Transport Canada.**

Shared Awareness

Without a common understanding of threats, information, and intelligence gaps, it is difficult to operate seamlessly with each other or execute the right priorities. Canada's Marine Security Operations Center (MSOC) initiative holds great promise in this regard. The goal is to use the MSOC as a bi-national clearinghouse to generate and disseminate vital maritime domain awareness information. In addition to MSOC facilities on the Atlantic and Pacific coasts, the Great Lakes MSOC in Niagara, Ontario, hosts a U.S. Coast Guard liaison officer. Both countries leverage initiatives like the Marine Security Operations Center to build cross-border common operating and intelligence pictures. It is not only possible, but our shared future requires it.

Bi-national sharing of sensitive information, for example, aerospace defense capabilities and response protocols shared through the North American Aerospace Defense Command, has maintained national security for years. Less sensitive information can be equally beneficial to both countries, such as locations of each other's small boats and aircraft along our shared border, as well as information regarding vessel, cargo, and passenger screening.

Seamless Operations

The tyranny of time and distance, particularly in the Great Lakes maritime domain, demands agile and coordinated responses. For example, the 1999 tri-lateral search and rescue agreement between the United States, Canada, and the United Kingdom makes clear that, when necessary to render emergency assistance to persons, vessels, or aircraft in distress, a response asset from one country may enter the territory of another country and make notifications as soon as practical.

The Great Lakes also present unique seasonal challenges that require operational support from both countries. During winter, portions of the shared marine border can be easily accessed by vehicle or on foot. Additionally, waterways that normally flourish with vessel traffic can become restricted by unrelenting ice—requiring significant effort to keep the borders open. Close coordination of our ice-breaking tugs, buoy tenders, and CGC *Mackinaw,* along with the two Canadian icebreakers, is critical to seasonal operations

Rescue aircrew from Coast Guard Air Station Traverse City, Mich., conduct helicopter hoist training with the crew of the Canadian Coast Guard Cutter *Cape Hurd* in Lake Superior. U.S. Coast Guard photo by LTJG Adam Saurin.

on waterways and in ports. Also, echoing the commitment to seamless operations, our icebreakers work in Canadian waters and vice versa.

Furthermore, more than 1,500 aids to navigation are retrieved in fall prior to the ice season. Then in spring, they are returned to their assigned positions. At several locations U.S. buoy tenders work aids in Canadian waters, and the Canadian Coast Guard services U.S. aids in Lake Ontario and the St. Lawrence Seaway. These operations optimize costly vessel missions and maximize the time the aids are in the water to facilitate commerce.

Although seamless for many missions, the shared maritime border does create a complex jurisdictional boundary for law enforcement. To resolve this problem, in June 2013, the Coast Guard and the Royal Canadian Mounted Police conducted combined vessel patrols known as "shiprider" operations and integrated cross-border maritime law enforcement operations to prevent crime. (See related article in this edition.)

Synchronized Priorities

Integrated border enforcement teams (IBETs), comprised of Canadian and American law enforcement agents from the U.S. Coast Guard, U.S. Customs and Border Protection, U.S. Bureau of Immigration and Customs Enforcement, Royal Canadian Mounted Police, and Canadian Border Services Agency, play a critical role in synchronizing combined operations. Similar to shiprider operations, the IBET partners continue to share information and coordinate operations. Leveraging our existing partnerships and information sharing creates a more secure maritime environment and strengthens our shared border.

We look forward to the day when we can walk into one of our command centers and see a common operating picture of all U.S. and Canadian maritime assets operating on the Great Lakes, with U.S. and Canadian personnel standing a watch side by side.

About the authors:

LCDR Matt White serves in the USCG 9th District Enforcement Branch. He is a 1994 graduate of the U.S. Coast Guard Academy, and a 2003 graduate of Harvard University's John F. Kennedy School of Government.

CDR Dave Beck is the Enforcement Branch chief of USCG 9th District. His responsibilities include law enforcement, station management, ordnance, and homeland security around the Great Lakes. His previous units include Sector Detroit, MSU Morgan City, Environmental Standards Division, MSO Pittsburgh, and the CGC Bramble.

Mr. Lorne Thomas is the chief of External Affairs, USCG 9th District. Prior to this position, his 27-year career with USCG included field and staff tours in marine safety and prevention. He is a 1981 graduate of the U.S. Merchant Marine Academy.

The Great Lakes Coordinating Council

There is no shortage of federal, state, local, and academic endeavors with interest in U.S./Canada border issues. From economic to environmental, from safety to security, there are commissions, councils, forums, institutes, and other bodies that focus on nearly every aspect of our shared border. From that cacophony of shared interests, it can be difficult to find harmony.

Safety, security, and resilience along our shared border are not mutually exclusive goals. They are as inextricably linked as our two countries; but individual sovereignty and bureaucratic disparities can often confound harmonized solutions.

Boat crews from the U.S. Coast Guard and Royal Canadian Mounted Police train along the shared U.S./Canada border. U.S. Coast Guard photo by Petty Officer Jerry Minchew.

Maritime threats and risks rarely fit neatly within an individual lane of agency or geographic responsibility. In the Great Lakes system, what happens in one part of the system invariably impacts other parts.

In June 2010, the leaders of the Coast Guard, Customs and Border Protection, and Immigration and Customs Enforcements' Homeland Security Investigations developed standard operating procedures for coordinated air and maritime operations on the Great Lakes. That effort has matured into the Great Lakes Coordinating Council.

While still an evolving effort, it's producing great work. We have established recreational and commercial vessel boarding and inspection and intelligence working groups that helped resolve redundancies, gaps, and conflicts across the Great Lakes DHS enterprise. This brings harmony, synchronization, and a common-sense governance structure that enables us to work together toward shared goals.

Endnotes:

1. Available at www.uscg.mil/d9/docs/D9_GLMS.pdf.
2. Available at www.epa.gov/greatlakes/basicinfo.html.
3. Available at www.hsdl.org/?view&did=710991.

Cyber Security

The boundary without borders.

CDR Ulysses Mullins
Chief
Critical Infrastructure Protection
U.S. Coast Guard

Cyber systems are integrated into nearly every aspect of our lives, business processes, and vital government functions. Consequently, cyber security has become an increasingly popular phrase and has gained worldwide attention due to:

- increased cyber threats,
- the difficulty in identifying cyber vulnerabilities,
- the consequences of calculated or even inadvertent exploitation.

Unlike more traditional threats, cyber attacks can originate from almost anywhere in the world, reach across physical borders with ease, and are invisible to conventional border security detection methods.

Moreover, the operating and communications systems that create cyber vulnerabilities are common across many industries and functions so that the maritime industry cannot rely on its unique nature for protection. We must address cyber security with the same commitment and innovation that we have applied to other aspects of border security.

PN_Photo/iStock/Thinkstock

Border Security and Cyber Security

Traditional border security has focused on physical aspects like stopping drug and human trafficking and shipments of illegal goods, as well as facilitating lawful passage of citizens across physical or geographic borders. Security breaches can impact our quality of life, health, economy, and critical infrastructure. Moreover, unauthorized persons crossing borders can carry disease; commit terrorist acts; or impact our economy or safety by importing illegal merchandise or weapons.

Cyber borders differ from physical borders in that they seamlessly and simultaneously create borders between nations. These borders are populated with desktop computers, cell phones, laptops, industrial control systems, and such, which allow almost unfettered passage for a profusion of data every day.

However, like physical borders that can be breached by those who shouldn't cross, cyber borders that facilitate data passage can also allow malicious data or viruses. This can facilitate entry into our nation's cyber infrastructure, where bad actors can gain access to vital national security information such as private sector trade secrets, financial information, health records, or other personal information.

In addition to gaining access, those who use these methods can also potentially gain control of industrial systems and manipulate operations for nefarious purposes.

How Do We Secure Our Cyber Borders?

In an ideal world it would be great if securing our cyber borders from cyber attacks involved simply employing and maintaining the latest version of security software. Unfortunately, it's not that easy.

Securing our cyber borders is a highly collaborative and systemic process that involves implementing good cyber "hygiene" for all who use these systems including government entities, the private sector, and private citizens. Broadly speaking, there are non-technical and technical cyber security approaches.

Non-technical cyber security approaches include:

- safeguarding passwords,
- not reusing passwords,
- resetting default passwords.

Technical cyber security approaches involve:

- employing cyber security practices during cyber product engineering and manufacture,
- installing firewalls and antivirus/antispyware software,
- installing intrusion detection software.

U.S. Cyber Security Strategy

On February 12, 2013, President Obama issued Executive Order 13636 to improve critical infrastructure cyber security and Presidential Policy Directive 21 to improve critical infrastructure security and resilience.

Key points include:

- developing a technology-neutral voluntary cyber security framework;
- promoting and incentivizing cyber security practices;
- increasing the volume, timeliness, and quality of cyber threat information sharing;
- incorporating privacy and civil liberties protections into initiatives to secure our critical infrastructure;
- developing situational awareness that addresses physical and cyber aspects of how infrastructure is functioning in near real-time;
- understanding cascading consequences of infrastructure failures;
- evaluating and maturing public/private partnerships;
- creating a comprehensive research and development plan.

Cross Border Cyber Security Strategy

As there is a vast amount of infrastructure that the U.S. and Canada share and, in keeping with the rich history of international collaboration between the countries, the U.S. president and Canadian prime minister established Beyond the Border: A Shared Vision for Perimeter Security and Economic Competitiveness.[1] This five-part action plan outlines the approach that the U. S. and Canada will take to ensure the economic prosperity of both parties.

KevinAlexanderGeorge/iStock/Thinkstock

Canadian Cyber Security Strategy

Our neighbors to the north have developed a cyber security strategy that focuses on three pillars and their underlying goals.

Securing government systems

- establishing clear federal roles and responsibilities,
- strengthening federal cyber system security,
- enhancing cyber security awareness throughout government.

Partnering to secure vital cyber systems outside the federal government

- partnering with the provinces and territories,
- partnering with the private sector and critical infrastructure sectors.

Helping Canadians be secure online

- combating cyber crime,
- protecting Canadians online.

1. Address threats early
2. Facilitate trade, economic growth, and jobs
3. Cross-border law enforcement
4. Critical infrastructure and cyber security
5. Manage our long-term partnership

Part four, in particular, contains measures intended to promote rapid response and recovery for disruptions to our shared infrastructure. This will require enhancing existing bilateral cyber security agreements to protect the cyber infrastructure and our joint response to cyber incidents; strong collaboration with the private sector, critical infrastructure owner/operators; and real-time international information sharing.

Jupiterimages/Photos.com/Thinkstock

U.S./Canadian Maritime Resilience Efforts

The United States-Canada Perimeter Security and Economic Competitiveness Action Plan

In addition to the Beyond the Border initiative, Canada and the United States have embarked on joint maritime commerce resilience-related activities. In 2011, as part of the United States-Canada Perimeter Security and Economic Competitiveness Action Plan, Transport Canada and the U.S. Coast Guard formed a framework for swiftly managing maritime traffic in event of an emergency.

The first phase was a pilot project in the Seattle, Wash./Vancouver, B.C. region in collaboration with the Pacific Northwest Economic Region organization, other levels of government, and industry stakeholders on both sides of the border. The participants developed information-sharing protocols and communication mechanisms and validated them at a table-top exercise. Efforts are now underway to expand this initiative to the Great Lakes and Atlantic regions.

Trade Recovery Guidelines

The U.S. Coast Guard and Transport Canada have also co-led an international committee to develop voluntary trade recovery guidelines for the International Maritime Organization's Facilitation Committee. The guidelines are intended for nations and industry to use to minimize supply chain delays in the event of large-scale disruptions.

Looking Ahead

Since the Beyond the Border initiative, the U.S. and Canada have made inroads to address critical infrastructure and cyber security by recognizing partnerships, information sharing, and risk management as mainstays that the U.S. Department of Homeland (DHS) Security and Public Safety Canada will leverage to prevent, respond to, and recover from critical infrastructure disruptions.

Both countries have engaged the private sector on cyber security, worked to improve information sharing, enhanced public awareness, and supported cyber security efforts through a joint cyber security action plan.

In addition, DHS, the U.S. Coast Guard, and other federal departments and agencies collaborated with the National Institute of Standards and Technology to develop a common cyber security framework that provides standards, best practices, and guidelines to provide a scalable, consistent approach to cyber security. This framework promotes open collaboration and accountability on cyber security within the private sector and enables businesses to analyze their current state of cyber security and develop the business case to achieve a desired future state.

The Coast Guard is developing a long-term cyber security strategy to frame the service's cyber security needs, including protecting our own systems and improving cyber security within the marine transportation system. USCG has also partnered with the U.S. Department of Energy to adapt its Electricity Subsector Cyber Security Capability Maturity Model to evaluate, prioritize, and improve cyber security capabilities within the maritime industry.

These efforts are great starts to addressing cyber security within and across borders. They must be matured, sustained, and ever-evolving to meet the capricious nature of cyber threats. Throughout industry and government, we must recognize the commonality of our cyber vulnerabilities and promote further collaboration and innovation to prevent, respond to, and recover from cyber-related disruptions.

Technology has given us a gift that literally makes the thousands of miles of land and ocean between our borders relatively seamless. It is our duty as citizens, government, industry, and nations to protect this gift from those who aim to cross those borders for malicious purposes.

About the author:

CDR Ulysses Mullins is the Critical Infrastructure Protection Branch chief in the U.S. Coast Guard Office of Port and Facility Compliance. His current duties include managing the Marine Transportation Recovery program, supporting marine transportation system security and resilience. He has served in the Coast Guard for more than 20 years in various capacities in marine safety, security, and environmental protection.

Endnote:

1. See www.dhs.gov/beyond-border-shared-vision-perimeter-security-and-economic-competitiveness.

A World without Borders

Is it obtainable?

by Mr. Michael P. Smith
U.S. Coast Guard
Office of Maritime Security Response Policy

Take a second to imagine a world without borders. While doing this, think about what borders are, the types we have, and how they affect our everyday lives. Now consider how people might function as a global society and exist in concert without the typical restrictions borders place upon everyday life.

Borders are natural or manmade lines that separate people or things. We have manmade borders that are drawn on maps and charts. These borders identify geographically where countries, states, counties, and cities are located and where people can travel from one country to another. Oceans, rivers, and mountains are some examples of natural borders.

Other borders include mental and psychological borders, moral borders, and economic borders. For example, economic borders affect the way we exchange goods and services. Many of these borders are becoming more obscure as technology advances and the world moves toward an electronic age of commerce. Questions are raised such as, "Should we have just one common global currency?" Or, "Will money become obsolete, and if so, would this make our lives easier or more challenging?" Also, "What would motivate people to work and be productive members of society?"

Pros and Cons

Borders help governments organize the world, and they can ensure safety by allowing others to maintain order in chaotic or diverse environments. Although orderliness comes at a cost—not just monetary, but in time, freedom, and opportunity—if borders can be used effectively, the cost to enforce them can be considered worthwhile.

So what would happen if we got rid of borders? In a world without borders, people could travel freely across the globe, without passports or worries about visa expiration dates; buy and sell products without limitations; and spend a lot less on border security, because there would be no border to secure. Perhaps people would even be more trusting, and the world would become a happy place. Or, would it? Would a world without borders solve problems or create more?

Background: Demerzel21/iStock/Thinkstock; Eraser: Zimmytws/iStock/Thinkstock

The world has become increasingly interconnected and interdependent. The Arctic provides a good example, because melting ice is opening new routes of travel, demanding greater international cooperation. Eliminating borders may simplify immigration since people would be able to come and go as they wish, and it may help ease traffic flow, reduce unemployment, and improve economies as well. However, eliminating borders may also add to problems such as refugee influx from war zones, natural disasters, and such.

Without borders, international cooperation will need to become truly global if we are to have a peaceful and prosperous future. Thinking carefully about our future and what we want it to look like can make a positive difference for all of us. Common goals and coordinated efforts to achieve them can pay big dividends.

If we can visualize a world without borders, we can achieve it. In fact, it appears that we may very well be headed in that direction. As the world becomes more interconnected and effectively smaller as technology changes our lives, perhaps we can overcome the negatives and amplify the positives of living in a borderless society.

About the author:
Mr. Smith is a retired U.S. Navy captain with 30 years experience in special operations. He has worked for the U.S. Coast Guard since 2002, serving in many areas including port security, exercises, leadership development, and Arctic initiatives.

Lessons Learned

from USCG Casualty Investigations

In this ongoing feature, we take a close look at recent marine casualties. We outline the U.S. Coast Guard marine casualty investigations that followed, which explore how these incidents occurred, including any environmental, vessel design, or human-error factors that contributed to each event.

It is important to note that article information, statistics, conclusions, and quotes come from the final, promulgated Coast Guard investigation report.

Collision on the Mississippi

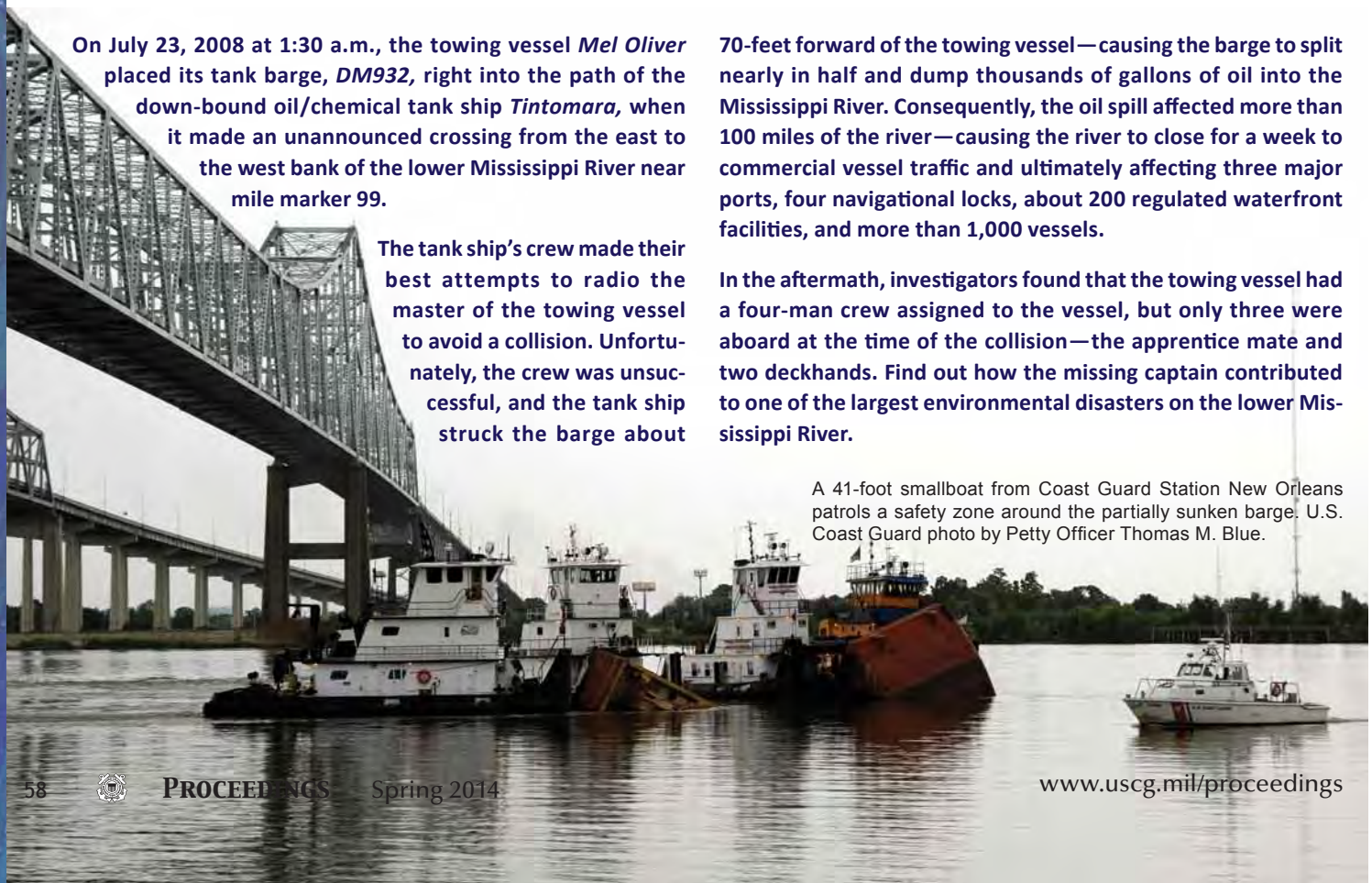
Improperly licensed master steers towing vessel into tank ship's path.

by Ms. Sarah K. Webster
Managing Editor
Proceedings of the Marine Safety & Security Council

On July 23, 2008 at 1:30 a.m., the towing vessel *Mel Oliver* placed its tank barge, *DM932,* right into the path of the down-bound oil/chemical tank ship *Tintomara,* when it made an unannounced crossing from the east to the west bank of the lower Mississippi River near mile marker 99.

The tank ship's crew made their best attempts to radio the master of the towing vessel to avoid a collision. Unfortunately, the crew was unsuccessful, and the tank ship struck the barge about 70-feet forward of the towing vessel—causing the barge to split nearly in half and dump thousands of gallons of oil into the Mississippi River. Consequently, the oil spill affected more than 100 miles of the river—causing the river to close for a week to commercial vessel traffic and ultimately affecting three major ports, four navigational locks, about 200 regulated waterfront facilities, and more than 1,000 vessels.

In the aftermath, investigators found that the towing vessel had a four-man crew assigned to the vessel, but only three were aboard at the time of the collision—the apprentice mate and two deckhands. Find out how the missing captain contributed to one of the largest environmental disasters on the lower Mississippi River.



A 41-foot smallboat from Coast Guard Station New Orleans patrols a safety zone around the partially sunken barge. U.S. Coast Guard photo by Petty Officer Thomas M. Blue.

Pre-Collision Events

On July 15, 2008, the towing vessel changed crew.[1] The captain assigned to the new shift called the port earlier that morning to say he would be arriving late. However, when the new steersman showed up for his shift, he relieved the captain from the previous shift, received the operation order from the towing vessel dispatcher, and then left the dock with the vessel, before the new captain had arrived.

It is important to note that the steersman held a Coast Guard merchant marine license, which authorized him to serve as an apprentice mate (steersman) of towing vessels upon the Great Lakes, inland waters, and western rivers. However, under this license an apprentice mate cannot operate a vessel without the direct supervision of a licensed master.

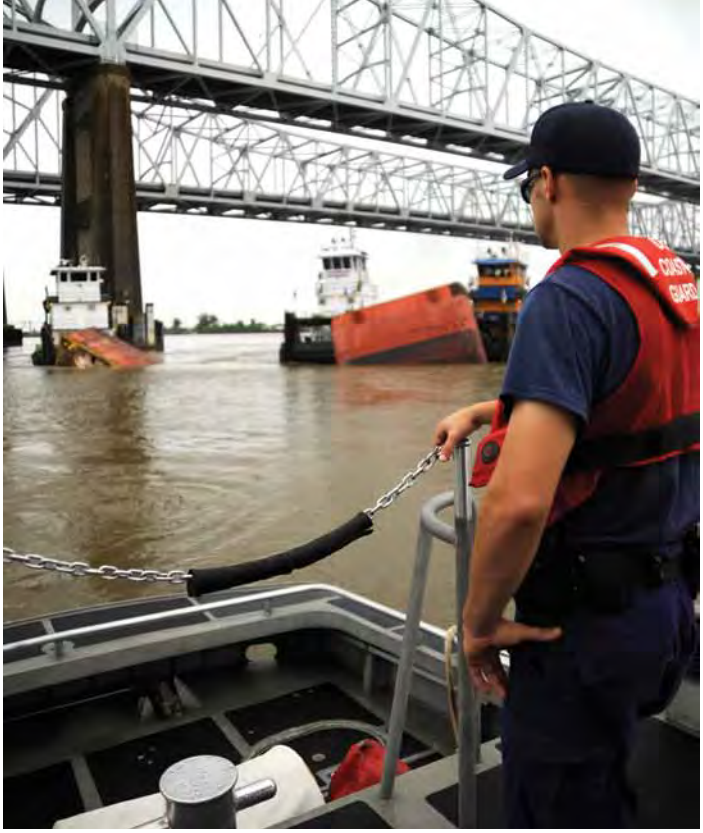
While waiting to enter the Harvey Locks, one of the towing company's co-owners called the steersman and asked him if the captain had arrived yet and then asked where the vessel was heading. The steersman informed the co-owner that the captain had not arrived yet, and he was taking the vessel to pick up the barge. The co-owner told the steersman "just be careful" and did not correct the improper staffing.

Later on, the captain caught up with his crew and boarded the vessel at the Harahan dock. However, several days later, he told the steersman that he needed to go home for a couple of days to handle some personal business. The steersman agreed to take over in his absence, so the captain called his friend—another captain from the same towing company—and arranged for his friend to pick him up from the Reserve Ferry Landing.

The towing vessel, now pushing a loaded red-flag barge,[2] came to the Reserve Ferry Landing. The steersman relieved the captain from the wheelhouse and did not pull the vessel into dock. Instead, the steersman slowed the vessel down, and the captain left the boat by skiff with the senior deckhand. The senior deckhand dropped the captain off at shore and then returned to the towing vessel.

The captain headed to Illinois—knowing that the vessel was not only inadequately manned, but also that the apprentice aboard did not have the proper license to be left alone and would be the sole operator of the vessel until his return. Additionally, at no time following the captain's departure did the crew notify the towing company about the captain's whereabouts. The captain himself made phone calls, but only to his crew to check in on them and on the vessel.

Originally, the captain told his steersman that he would be back by July 22. However, at 10 p.m. on that evening the captain called the vessel, while it was moored temporarily at the Stone Oil Dock, La. He spoke with the new senior deckhand



A Coast Guard crew member aboard a 41-foot smallboat from Coast Guard Station New Orleans overlooks the partially sunken barge on the Mississippi River. U.S. Coast Guard photo by Petty Officer Thomas M. Blue.

aboard the vessel who had swapped shifts with the previous senior deckhand. The captain told the new senior deckhand that he would not be back to the vessel until the following morning and asked that the crew member let the steersman know of his itinerary change.[3]

The steersman did not speak with the captain personally, because he had gone to sleep earlier that day. However, the senior deckhand said under testimony that he did not know the captain was absent from the vessel—even though evidence produced at the hearing verified the telephone call took place.

Meanwhile, On the Tank Ship

On July 22, the tank ship (the other vessel involved in the incident) got underway just before midnight with 26 crew members aboard. During the transit the pilot remained on the bridge and gave navigational instructions to the bridge crew, as they proceeded down-bound on the lower Mississippi River. The pilot radioed the vessel traffic service (VTS), as required, to check in near mile marker 103.

At 1:27 a.m., the tanker ship radioed VTS New Orleans to complete a second required check in. The vessel was the second of three deep-draft vessels proceeding southbound on the lower Mississippi River—maintaining a 1 to 1.5 nautical mile distance between it and the vessel in front.

Moments Before Impact

The following morning around 12:41 a.m., the steersman awoke and pulled the towing vessel away from the Stone

Oil Dock. During the transit from Stone Oil, not more than 30 minutes underway, the steersman spilled a drink in the wheelhouse and called deckhand 2 to bring him a mop. Deckhand 2 brought the steersman a mop and left it with him.

Deckhand 2 said under testimony that when he took the mop to the wheelhouse, the steersman "seemed like he was okay." (NOTE: It is also apparent to marine investigators that the steersman had situational awareness, based on his track record from the time it left Stone Oil until at least five minutes and 13 seconds prior to the collision.)

At 1:27 a.m., the towing vessel slowly turned to port. Less than a minute later, the tank pilot called out to the unknown towing vessel:

"Sixteen to this tow. Looks like you got one barge right across from DC Harvey."

Twenty seconds later, vessel traffic service answered back and informed the tank ship of the identity of the towing vessel. The tank ship pilot called the towing vessel again.

The steersman testified that he heard the previous calls, but did not realize the tank ship was trying to hail him—until he heard the towing vessel's name. Once he heard the vessel's name he looked up to see that it had turned into the river. He attempted to steer the vessel out of the path of the tanker, but could not.

At 1:28 a.m., the pilot on the tank ship ordered the master to blow the ship's whistle and then ordered "full astern." Meanwhile, back on the towing vessel, the steersman continued to steer the towing vessel with the primary steering, but never attempted to use the flanking rudders, nor attempted to turn to port when the steering would not go to starboard. The steersman did not back down or reverse the throttle in an attempt to slow or stop the towing vessel, until he heard someone on the radio say: "Back on it."

At 1:30 a.m., the two deckhands stepped outside the towing vessel and witnessed the tank ship approach. Seconds later the tank ship collided with the barge—causing the facing wires attaching the towing vessel to the barge to break—and separating the towing vessel from the barge. The barge wrapped around the bow of the tank ship and then split—spilling more than 282 thousand gallons of oil into the Mississippi River. The towing vessel then rocked violently side to side and spun around, but stayed afloat.

Deckhand 2 proceeded to the wheelhouse to locate the steersman. When he reached the steersman, he started asking questions, but the steersman remained unresponsive. Finally, the steersman turned to deckhand 2 and said, "It didn't steer right."

Shortly After the Collision

Following the collision, the tank ship turned around in the river and came to anchor facing up bound. The tank ship suffered minimal damage with paint scrapings and oil residue. The tanker crew did not report any injuries.

The towing vessel pushed into a pier on the west bank near the vicinity of the collision and sustained minimal damage to surface areas and from the backlash of the face wires. One crew member sustained a shoulder injury because of the collision. Sector New Orleans command center received notification of the collision at 1:41 a.m. on July 23, 2008.

Investigative Findings

The VTS playback showed the towing vessel slowed from 4.3 knots to 3.4 knots at 1:30 a.m., and the tanker slowed from 14.3 knots to 12.9 knots. However, there was not enough time or stopping distance to prevent the collision; the towing vessel had an air clutch that takes roughly six to seven seconds to engage. Based on the reaction time of the air clutch, investigators found that the towing vessel was not backed after the first mention of the need to reverse.

Additionally, the VTS did not show any erratic movements made by the towing vessel during its transit from Stone Oil, with the exception of some wavering movements just before the turn to port. The watch stander said that the towing vessel had made no erratic movements or any other deviation from its intended course, and "according to the course he was running, he was well out of the way. It was no concern."

The fuel barge DM 932 is placed aboard the carrier barge as salvage operations of the wreck on the Mississippi River at New Orleans come to an end. The bow section of the barge was removed from the river Aug. 9, 2008. U.S. Coast Guard photo by Petty Officer Adam C. Baylor.

Thousands of gallons of fuel floats on the surface of the Mississippi River just after the collision. New Orleans water authorities closed several water intake valves to keep the drinking water from becoming polluted. U.S. Coast Guard photograph by Petty Officer Chris Lippert.

Both the pilot of the tank ship and the watch stander attempted to hail the towing vessel, without success. Marine investigators gathered evidenced that proved that the pilot made rudder commands to the helmsman and properly answered various radio calls; and the pilot properly executed his duties prior to encountering or becoming alarmed by the actions of the towing vessel. Finally, there were no operational deficiencies reported about the tank ship on the day of the incident.

Marine investigators also found evidence that the towing vessel's steersman had performed the duties of a properly licensed captain before with the towing company's knowledge. In fact, the co-owner in charge of vessel operations, who has sole authority to assign the captain to each towing vessel, had authorized the steersman to act as a "captain," holding his own watch. The steersman served as captain aboard several vessels, during an extended period prior to this incident, and received a captain's rate of pay. The steersman knew his license did not qualify him to operate as a captain without direct supervision, but did so anyway.

The towing vessel operated as a "trip boat," meaning it worked a specific run. The towing vessel operator knew that when a vessel runs more than 12 hours in a day, the crew complement must include two licensed captains as per 46 CFR §15.705(d), 46 USC §8104(h), and 46 USC §8904(c). According to the marine investigation report, the vessel's logbook showed a pattern of discrepancies relating to this regulation.[4]

Lessons Learned

Marine investigators concluded that the towing vessel's turn to port prompted the initiating event of this marine casualty, brought on by the steersman's complete loss of situational awareness. Additionally, investigators explored several possible causes that contributed to the incident:

1. Crew fatigue and inattention: Following the unauthorized departure of the captain, the crew conducted nearly three days of 24-hour operational duty. Consequently, the loss of situational awareness was so complete that, whether the steersman unintentionally moved the steering sticks or the tow was simply acted upon by river currents, his inattention to his course led to his failure to detect the turn to port.
2. Excessive delay in or total lack of exercising evasive actions: The steersman delayed reversing his engines until 16 seconds prior to the collision. He also failed to answer radio calls or otherwise notify on-coming traffic of his intentions, or of any mechanical issues with the vessel.
3. A loose item of debris may have partially jammed the primary steering linkage on the towing vessel: This finding led to the conclusion that an open linkage steering system, especially when sharing the void space with unkempt, unsecured items, is susceptible to becoming jammed, lodged, or otherwise blocked. Contributing to that susceptibility is the lack of a protective guardrail around the open mechanical linkage system.
4. Violation of 33 USC Chapter 25 – Ports and Waterways Safety Program:[5] The captain violated this law when he left the vessel to his steersman who was not properly licensed to operate it without supervision; and the steersman violated this law when he created a hazardous condition by agreeing to operate the boat without the proper license.

About the author:
Ms. Sarah K. Webster is the managing editor of Proceedings of the Marine Safety & Security Council magazine. She was previously a news reporter and feature writer for Gannett Inc., and a beat reporter for Micromedia Publications. She is working on her M.A. in communication from Kent State University, has a B.A. in communication from Monmouth University, and an A.A. in humanities of art from Ocean County College.

Endnotes:

1. The wheelhouse crew and the deckhands alternated crew-change to avoid a complete crew turn-over.
2. A red-flag barge describes one that contains a bulk or hazardous cargo. The term comes from the display of red flags, usually metallic, used to notify others of the hazardous nature of cargo being transferred or carried.
3. Deckhand 3 had replaced deckhand 1 that morning.
4. Title 46 of the CFR clearly defines work hours for towing vessels: "Towing vessels operating more than 12 hours in any 24-hour period require a second officer holding a license of master or mate of towing vessels. Watches may be divided, regardless of the length of the voyage, but no licensed operator shall work more than 12 hours in a 24-hour period, except in an emergency." (46 CFR §15.705(d) & 46 USC §8104(h) &§8904(c).
5. 33 USC Chapter 25 – Ports and Waterways Safety Program, the results of which, among other things, adversely effected the safety of two vessels and the environmental quality of the Lower Mississippi River south of mile marker 99.

Understanding Titanium Dioxide

by Ms. Roshanak Aryan-Nejad
Chemical Engineer
U.S. Coast Guard Headquarters Systems Engineering Division

Chemical of the Quarter

What is it?

Titanium dioxide (TiO_2), also known as titania, is the naturally occurring oxide of titanium and is the most widely used white pigment, because of its brightness and very high refractive index. It is a substitute for lead paint and is in 70 percent of pigments worldwide. Titanium dioxide is also used as a pigment to provide whiteness and opacity to products such as paints, plastics, papers, foods, beverages, medicines, and cosmetics like sunscreen. It is popular for sunscreen, because of its high refractive index, its strong ultraviolet (UV) light absorbing capabilities, and its resistance to discoloration under UV light.

Titanium dioxide can also produce electricity, when transparent, and under the influence of light in its nanoparticle form. However when subjected to electricity, the nanoparticles blacken and form the basic characteristics of a LCD screen. Titanium dioxide also offers great potential as an industrial technology for detoxification or remediation of wastewater due to the following factors:

- The process uses natural oxygen, sunlight, and thus occurs under ambient conditions; it is wavelength selective and accelerated by UV light.
- The photo catalyst is inexpensive, readily available, non-toxic, chemically and mechanically stable, and has a high turnover.
- Oxidation of the substrates to CO_2 is complete.
- TiO_2 can be supported on suitable reactor substrates.

How is it shipped?

TiO_2 is an odorless gray powder, which is insoluble in water. It is shipped in bulk tank vessels as a slurry, since it is a solid.

Why should I care?

Shipping concerns

Titanium dioxide slurry is categorized as a Category Z in the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code), 2007 Edition. Being a Category Z effectively means that it is deemed to present a minor hazard to marine resources or human health.

Health concerns

High concentrations of titanium dioxide dust may cause coughing, and mild, temporary irritation. Long-term inhalation of high concentrations of powdered or ultrafine titanium dioxide may cause lung cancer, based on laboratory studies. In general, long-term exposures to high concentrations of dust may cause increased mucous flow in the nose and respiratory system. However, this condition usually disappears after exposure stops.

Controversy exists as to the role occupational exposure to dust has in the development of chronic bronchitis (inflammation of the air passages into the lungs). Other factors such as smoking and general air pollution are also important, but dust exposure may contribute to this effect. In laboratory studies, long-term inhalation exposure has caused persistent adverse effects on the lungs (e.g. inflammation, fibrosis, changes to alveolar cells), which are believed to result from dust overloading of the lungs. Effects with ultrafine titanium dioxide occur at much lower exposure concentrations than are required with the larger sized pigment-grade particles. The effects are more closely related to lung burden in terms of the surface area rather than the mass of the particles.

Fire or explosion concerns

Titanium dioxide does not burn and does not support combustion.

What is the Coast Guard doing about it?

Titanium dioxide is categorized as a "Subchapter O" cargo regulated in 46 Code of Federal Regulations Parts 150 and 153. If this cargo is carried in domestic tank barges, it is not regulated, since it does not burn and does not have safety hazards. If carried on ships, the vessel masters must follow the IBC codes, and the Coast Guard must inspect the vessels.

About the author:
Ms. Roshanak Aryan-Nejad is a chemical engineer working in the Systems Engineering Division at U.S. Coast Guard headquarters, focusing on domestic and international regulations. Her background is in environmental engineering and regulatory compliance.

Nautical Engineering Queries

Prepared by NMC Engineering Examination Team

1. During the initial cooling down of a box temperature in a refrigeration system, which of the devices listed is used to prevent excessive gas pressure at the compressor suction?

A. Suction pressure hold-back valve
B. High pressure cutout
C. Solenoid valve
D. Low pressure cutout

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2. The function of a centrifugal pump double volute casing is to _____.

A. reduce radial thrust on the impeller
B. double the liquid velocity through the pump when compared to a single volute
C. reduce the hydraulic end thrust
D. provide the effect of multi-staging

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3. When a hydraulic valve lifter is on the base circle of the cam, 'zero' valve lash is maintained by the _____.

A. valve spring
B. plunger spring
C. oil pressure
D. rocker arm

1. A. Suction pressure hold-back valve — **Correct answer.** This valve is situated in the compressor suction line and senses the pressure downstream at the compressor inlet. When box temperatures are in range, the compressor suction pressure is in the normal range and below the set point of the suction pressure hold-back valve, and as a consequence, the valve is wide open and the compressor capacity is not limited. With higher box temperatures, however, the suction pressure will rise to the set point of the valve and the valve will then throttle the flow of suction gas to the compressor, reducing the compressor volumetric displacement during the initial pull-down period. The suction pressure hold back valve is also known as a crankcase pressure regulator.

B. High pressure cutout — Incorrect answer. This is a safety switching device, which shuts down the compressor in the event of unusually high discharge pressure, regardless of the cause. It does not directly sense the compressor suction pressure and does not function to prevent excessive gas pressure at the compressor suction.

C. Solenoid valve — Incorrect answer. This is a generic term referring to any number of electro-magnetically operated valves in the system, which depending on the application, may vary widely in terms of function.

D. Low pressure cutout — Incorrect answer. This is an operating control switching device, which normally starts and stops the compressor and is part of a pump-down circuit, which also includes thermostatically controlled box solenoid valves. Even though it does directly sense suction pressure, it does not function to prevent excessive gas pressure at the compressor suction. In fact, it closes (to start the compressor) on a rise in suction pressure and opens (to stop the compressor) on a fall in suction pressure.

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2. A. reduce radial thrust on the impeller — **Correct answer.** A centrifugal pump double volute casing has a dividing wall existing in the volute through 180 degrees. This dividing wall is designed to neutralize the radial reaction forces when at less than design capacity. As such, the radial loading on the pump shaft bearings is minimized throughout the entire range of pump capacities.

B. double the liquid velocity through the pump when compared to a single volute — Incorrect answer. The liquid velocity through the pump is a function of impeller speed and diameter. All other factors being equal, there would be no essential difference between liquid velocity through a single volute pump as compared to a double volute pump.

C. reduce the hydraulic end thrust — Incorrect answer. A centrifugal pump double volute casing is designed to handle issues related to radial thrust and is not designed to handle any issues related to end (axial) thrust. Centrifugal pumps are sometimes designed with an impeller with a double suction which is used to neutralize axial (end) thrust. This is not to be confused with a double volute casing.

D. provide the effect of multi-staging — Incorrect answer. Multi-staging is used to increase the pressure output of a centrifugal pump beyond what one pump impeller can deliver. This increase in pressure output is accomplished by the use of multiple impellers, with each impeller discharging into the suction of the impeller of the following stage. The centrifugal pump double volute casing does not increase pressure over that of a single volute casing.

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3. A. valve spring — Incorrect answer. The valve spring is the closing force for the valve itself. Its function is to keep the valve seated when the valve lifter or cam follower is on the base circle of the cam. It has no direct impact on valve lash.

B. plunger spring — **Correct answer.** The plunger spring acts so that the pushrod seat remains in contact with the pushrod at all times. As such, the hydraulic valve lifter maintains "zero" valve lash.

C. oil pressure — Incorrect answer. Whether valve lifters or cam followers are mechanical or hydraulic in nature, oil is required as a lubricant as the device reciprocates within its bore. With hydraulic valve lifters, oil is also used as a hydraulic medium to make up for changes in overall lifter length; however, it is the plunger spring itself which maintains "zero" lash.

D. rocker arm — Incorrect answer. The rocker arm is designed to translate the upward motion of the valve lifter or cam follower to the downward motion of the diesel engine valve and vice-versa. The rocker arm is used to set valve lash on mechanical lifters. The rocker arm does not maintain "zero" lash. Only hydraulic valve lifters do, by the action of the plunger spring.

Nautical Deck Queries

Questions

Prepared by NMC Deck Examination Team

1. What does a pyrometer measure on a diesel engine?

A. Water temperature
B. Water pressure
C. Exhaust temperature
D. Air box pressure

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2. Which of the following best describes the requirement of the emergency pump control when used as the emergency shutdown on tank vessels?

A. Stop the flow of oil at the main deck manifold
B. Prevent the oil from leaving the shore facility
C. Prevent the oil from siphoning through the pump
D. None of the above

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3. Determine the great circle distance and initial course from Lat 37°47.5'N, LONG 122°27.8'W to LAT 33°51.7'S, LONG 151°12.7'E.

A. 6324.2 miles, 310.3°T
B. 6345.3 miles, 301.7°T
C. 6398.0 miles, 298.3°T
D. 6445.2 miles, 240.3°T

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4. International & Inland: Which statement is true, concerning a vessel under oars?

A. She must show a stern light.
B. She is allowed to show the same lights as a sailing vessel.
C. She must show a fixed all-round white light.
D. She must show a day-shape of a black cone.

1.

A. Water temperature — Incorrect answer. A standard thermometer is used to measure the jacket water temperature.

B. Water pressure — Incorrect answer. A standard pressure gauge is used for this measurement.

C. Exhaust temperature — **Correct answer.** A pyrometer is generally considered as a unit for measuring high temperatures that would be encountered in the exhaust system.

D. Air box pressure — Incorrect answer. Customarily a manometer is utilized to measure air box pressure.

2.

A. Stop the flow of oil at the main deck manifold — Incorrect answer. The regulation requires that the system stop the siphoning of liquid through the pump including within the vessel itself. Stopping the flow at the deck manifold would not stop the internal transfer on most piping configurations.

B. Prevent the oil from leaving the shore facility — Incorrect answer. The question refers to the requirements of the emergency pump control on a tank vessel, not the shore facility.

C. Prevent the oil from siphoning through the pump — **Correct answer.** Reference: 33 CFR 155.780. "If an emergency pump control is used, it must stop the flow of oil or hazardous material if the oil or hazardous material could siphon through the stopped pump."

D. None of the above — Incorrect answer.

3.

A. 6324.2 miles, 310.3°T — Incorrect answer.

B. 6345.3 miles, 301.7°T — Incorrect answer.

C. 6398.0 miles, 298.3°T — Incorrect answer.

D. 6445.2 miles, 240.3°T — **Correct answer.** The problem can be solved utilizing the following formulas:

$\text{Cos Distance}=(\text{Cos Lat}_1 \times \text{Cos Lat}_2 \times \text{Cos Dlo}) \pm (\text{Sin Lat}_1 \times \text{Sin Lat}_2)$
$\text{Cos Initial Course}= (\text{Sin Lat}_2 - (\text{Cos Distance} \times \text{Sin Lat}_1)) \div (\text{Sin Distance} \times \text{Cos Lat}_1)$

$\text{Cos Distance}=(\text{Cos Lat}_1 \times \text{Cos Lat}_2 \times \text{Cos Dlo}) \pm (\text{Sin Lat}_1 \times \text{Sin Lat}_2)$
$\text{Dlo} = (180° - 151°12.7\,'\text{E}) + (180° - 122°27.8\,'\text{W}) = 86.3250°$
$(\text{Cos Lat}_1 \times \text{Cos Lat}_2 \times \text{Cos Dlo}) = .042060826$
$(\text{Sin Lat}_1 \times \text{Sin Lat}_2) = .341441441$
$\text{Cos Distance}=(\text{Cos Lat}_1 \times \text{Cos Lat}_2 \times \text{Cos Dlo}) \pm (\text{Sin Lat}_1 \times \text{Sin Lat}_2)$
Subtract when crossing the equator
$\text{Cos Distance} = (.0420608260) - (.341441441)$
$\text{Cos Distance} = (-0.29938)$
$\text{Distance} = 107.4204 \times 60° = 6445.2264 \text{ nm}$

$\text{Cos Initial Course}= (\text{Sin Lat}_2 - (\text{Cos Distance} \times \text{Sin Lat}_1)) \div (\text{Sin Distance} \times \text{Cos Lat}_1)$
Lat_2 is negative when crossing the equator
$(\text{Sin Lat}_2 - (\text{Cos Distance} \times \text{Sin Lat}_1)) = (-.373731964)$
$(\text{Sin Distance} \times \text{Cos Lat}_1) = .753998648$
$\text{Cos Initial Course}= (-.373731964) \div (.753998648)$
$\text{Cos Initial Course} = 0.4957$
$\text{Initial Course} = \text{N } 119.7137° \text{ W}$
$\text{Initial Course} = (360°-119.7137°)$
$\text{Initial Course} = 240.2862°$

4.

A. She must show a stern light. — Incorrect answer. A vessel under oars may show the lights prescribed for a sailing vessel, and if she did, a stern light would be included.

B. She is allowed to show the same lights as a sailing vessel. — **Correct answer.** Reference: Inland and International Rule 25d(ii): "A vessel under oars may exhibit the lights prescribed in this rule for sailing vessels, but if she does not, she shall have ready at hand an electric torch or lighted lantern showing a white light which shall be exhibited in sufficient time to prevent collision."

C. She must show a fixed all-round white light. — Incorrect answer. This is not a requirement of a vessel under oars.

D. She must show a day-shape of a black cone. — Incorrect answer. There is no day shape requirement for a vessel under oars.

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Proceedings
of the Marine Safety & Security Council

Upcoming in

Cruise Ship National Center of Expertise

USCG Western Hemisphere Strategy

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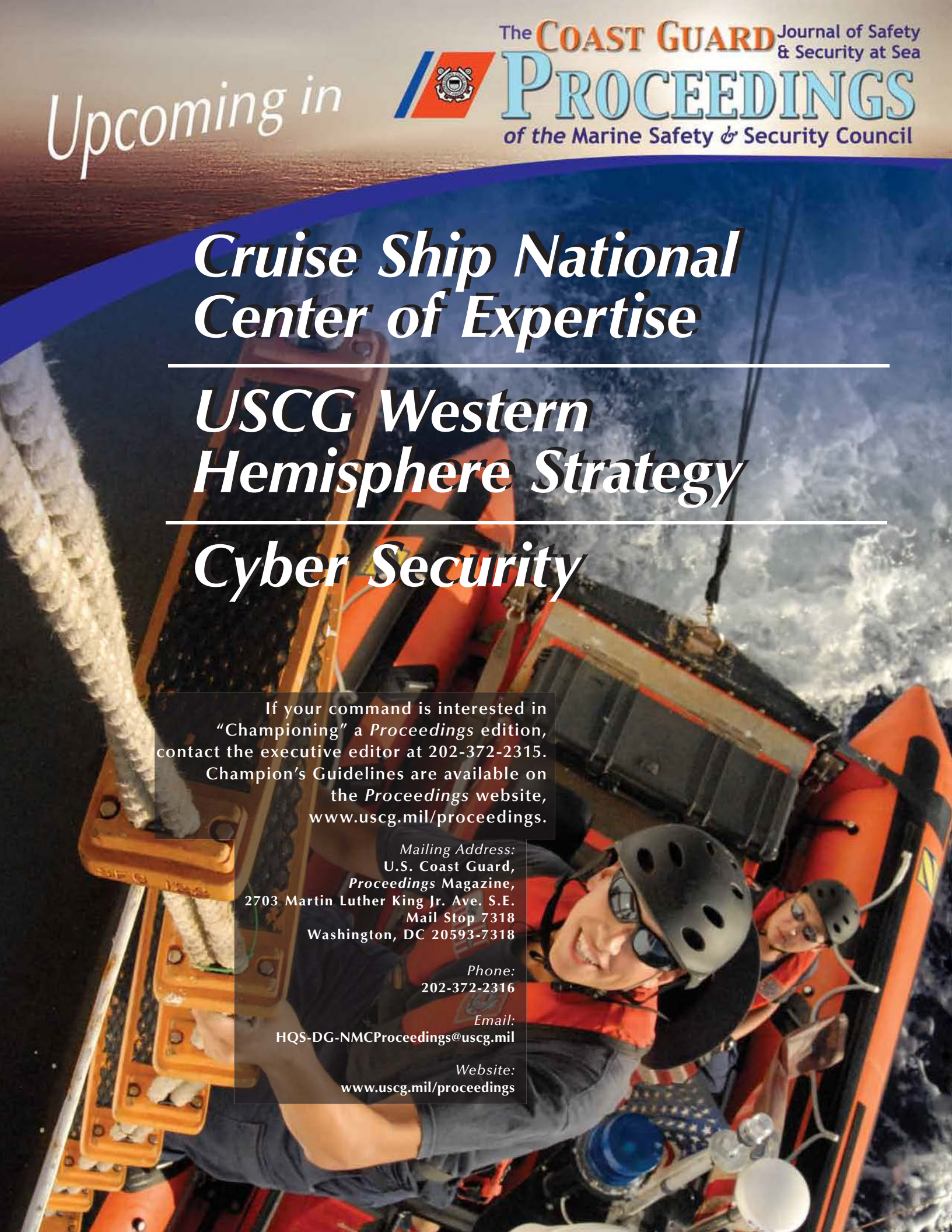

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